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The Pharmacist, Being Legally Entrusted with the Dispensing and Sale of Narcotic Drugs and Alcoholic Liquors, Should Merit This Responsibility by Upholding and Conforming to the Laws and Regulations Governing the Distribution of These Substances.—Code of Ethics A. Ph. A.

Vol. XXV, No. 11 NOVEMBER, 1936

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

TRADE MARK

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THE 85th ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN NEW YORK CITY—Date and Headquarters to Be Selected.

Local Secretary, Hugo H. Schaefer, 115 W. 68th St., New York, N. Y.

The 1937 Meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, Conference of Pharmaceutical Association Secretaries, of the Pharmaceutical Law Enforcement Officials and the Plant Science Seminar will also be held in New York.

Entered as second-class Matter, January 23, 1917, at the Post Office at Easton, Pa., under the act of March 3, 1879. Acceptance for mailing at a special rate of postage provided for in section 1103. Act of October 3, 1917; authorized July 10, 1918

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E. F. KELLY, Secretary,
2215 Constitution Ave.,
Washington, D. C.

AMERICAN PHARMACEUTICAL ASSOCIATION

SOME EARLY PHARMACISTS AND THOSE DISTINGUISHED IN OTHER ACTIVITIES.

The *Weekblad* in an historical review cites early apothecaries of The Hague; among them Pieter Willems de Vryes, 1561; Gregorius van Moersele, 1562; Gregorius de Apothecker, 1563. The establishment of an apothecary in 1397 is mentioned.

Sir Henry Wellcome, member of the AMERICAN PHARMACEUTICAL ASSOCIATION for more than a half century, was outstanding in several other fields of activity. Reference is made to his biography in the July JOURNAL.

John Uri Lloyd, distinguished as an author, was a former president of the AMERICAN PHARMACEUTICAL ASSOCIATION.—See April 1936, JOURNAL. Henry Breasted, prominent antiquarian and Egyptologist, was a pharmacy graduate.

George E. Ewe presented an historical paper at Portland, on David Henshaw, who was a Boston druggist, and Secretary of the Navy in 1843.

Frido Kordon, in the *Pharmazeutische Post*, discusses the influence of pharmacists upon the development of chemistry. The following are included: Johann Kunkel, Joachim Becher, Stefan Franz Geoffroy, Johnann Friedrich Boettiger, Wilhelm Franz Louelle, Sigismund Andreas Marggraff, Valentin Rose, Carl Wilhelm Scheele, Martin Heinrich Klaproth, F. J. Westrumb, Joseph Louis Proust, L. N. Vauquelin, Paul Traugott Meissner, Friedrich Sertuerner, Joseph Pelletier, Joseph Caventou, Heinrich Rose, Christian Frederich Schoenbein, Jean Baptiste Andre Dumas, Justus von Liebig, Karl Friedrich Mohr, H. von Regnauld, Karl Friedrich Rammelsberg, Hermann Hager, Max von Pettenkofer, L. Remiguis Fresenius, Ferdinand Runge, Marzellin Berthelot, Lukasiewicz, Wilhelm Merck, Eugen Dieterich, Ernst Ludwig, Wilhelm Gintl, Gustav Hell, Ernst Schmidt, Johann Karl, W. F. Tiemann, Karl Arnold, Hugo Schroetter, Hermann Thoms, Josef Tambor, Karl Dieterich.

The foregoing list was abstracted from the Abstract Section, Henry M. Burlage, abstractor.

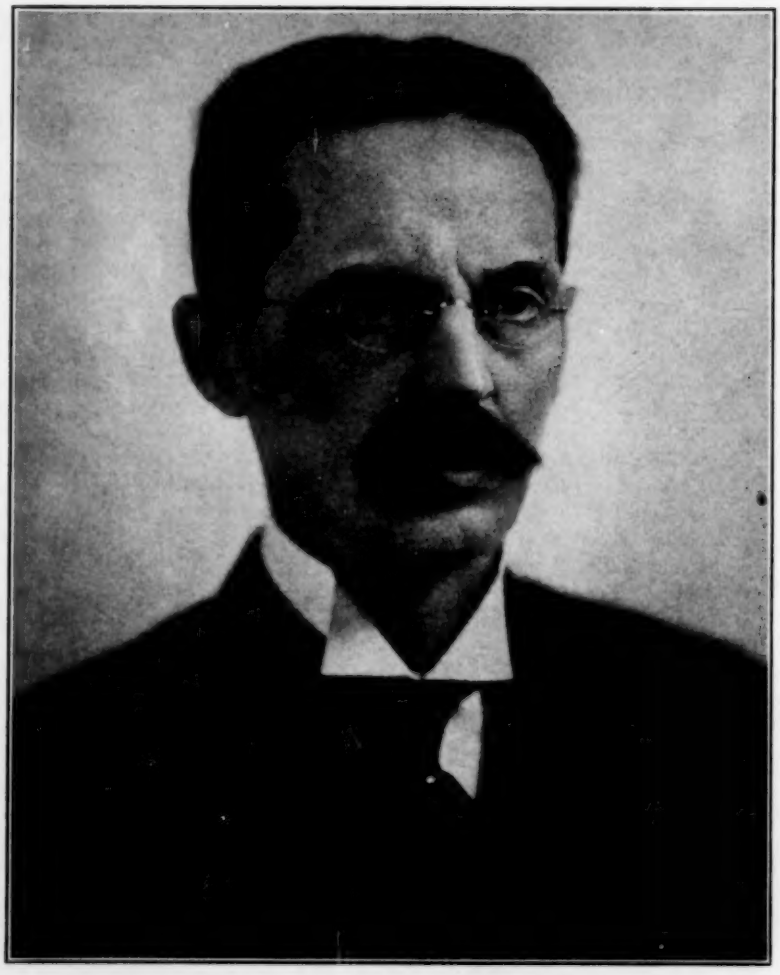
The *Pharmazeutische Post* also published an historical review by Roderich Wald dealing with the careers of the following German apothecaries as poets and thinkers. The abstract was prepared by Henry M. Burlage. The names of the apothecaries are: Theodor Heinrich Meyer, Emil Uellenberg, Albert Trautmann, Arthur Hoger, Johannes Richter, Fritz Bouchholtz, Walther Zimmermann, George Loerke, Georg Trakl, Klara Bahrenburg, Kasper Ludwig Merkl, Adolfe Hermsenn, Louis Grellepois, Alfred Dorner, Ludwig Leiner, Rudolf Uhland, Franz Xavier Muenzel.

The account of the "Foxglove and Some of Its Medical Uses" was published by William Withering in 1785, 150 years ago, and represents the sesquicentennial of Digitalis in medicine.

LIBRARIES.

The Army Medical Library has celebrated its centennial. It began with a small collection of books placed in the office of Surgeon General Lovell and has now grown to be the largest Medical Library in the world. The beginning of the Library was prompted by Dr. John Shaw Billings because in the writing of his thesis he was unable to find the required references in any one library and it was necessary for him to consult the libraries of various sections of the country. The space occupied by the Army Medical Library, in Washington, during its early years, was so small that in opening cases of books it was necessary to take them outside of the building. The Library now has nearly 450,000 volumes.

A collection of books relating to the history of the medical sciences recently was on exhibit in the Lima Library, Catholic University, Washington. Among the books are "The Drugs and Spices of India," by Garcia da Orta, printed in Goa, India, in 1563. This volume, written in Portuguese, contains one of the earliest descriptions of cholera and its remedy, and through it Europe learned of the plants and botany of the East. Other books include "A Natural History of Brazil," by William Tiso and George Marcgraf, printed in Amsterdam in 1648, which for over a century was one of the principal scientific works on Brazil, and "History, Natural and Moral of the Indies," by Joseph Acosta, S. J., also a treatise on the pestilence of Pernambuco by John Sarreyra a Rosa, containing one of the first descriptions of yellow fever known in Europe, printed in Lisbon in 1694.—From the Historian's Report.



R. E. RHODE.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XXV NOVEMBER, 1936 No. 11

RUDOLPH E. RHODE.

Rudolph E. Rhode was born December 6, 1859, in Ramelow, Mecklenburg-Strelitz, Germany. He received his early education at the Gymnasium in Friedland and emigrated with his parents to Chicago in 1874 and entered the drug store of Carus Von Ressler, Chicago, as an apprentice. Later, he engaged with Ernest Matthei and with A. Arend.

He enrolled as a student in the Chicago College of Pharmacy in 1877 and was graduated in 1879; thereafter, for two years he was employed by Louis Woltersdorf where excellent pharmaceutical training was obtained. From 1881 to 1883 he clerked for the old-established drug firm of Moench & Reinhold, Chicago, and in October 1883 purchased the drug store of Laux & Woltman at 1301 N. Clark Street, Chicago, where he remained for many years, building up a most successful prescription practice.

In 1890, his pharmacy was completely destroyed by fire but the building was rebuilt and the pharmacy refitted, becoming one of the finest in the city; during the World's Columbian Exposition in 1893 many European pharmacists visited the Rhode pharmacy and were unanimous in its praise. This prescription pharmacy achieved a wide reputation not only for the excellent equipment and extensive stock but for the accuracy and reliability of its staff. A feature of Mr. Rhode's pharmacy that commended him to physicians was his exclusion of patent nostrums from his stock. It was here that the late Professor C. S. N. Hallberg developed a number of the working formulas that appeared in the National Formulary of 1888.

In 1920, Mr. Rhode found it desirable to dispose of his pharmacy on North Clark Street and in 1920 he opened a prescription pharmacy in the Republic Building, in Chicago's business center.

Mr. Rhode has been a member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1887 and of the Illinois Pharmaceutical Association during the same period. He is a regular attendant at the weekly luncheons of the Chicago Veteran Druggists' Association, which organization he has also served as president.

Many of Chicago's best-known pharmacists have had their training under him.

He has never married.—W. B. D.

EDITORIAL

E. G. EBERLE, EDITOR 2215 Constitution Ave., WASHINGTON, D. C.

COÖPERATIVE RESEARCH.

IN HIS address as Remington Medalist, the recipient discussed the various phases of research, from the simplest to the most complex, and application. Medical research comprises a large group of scientific and sociological problems; it includes pharmacy and its divisions; the discoveries and developments in plant and animal life; searching the elements and applying methods which will separate them from the dross, making compounds, and extending their use as medicinal agents.

Those who have become acquainted with the activities of Lord Nuffield, British industrialist, have learned of the panoramic scope of his philanthropic vision which has been evidenced by his many benefactions for cripples and crippled children in Great Britain, New Zealand, Australia and elsewhere, not only for making their burdens lighter, but to point out the way for medical and surgical research. He enjoins those who are to benefit by his donation to keep in close touch with "developments in the sciences ancillary to medicine." He is devoting a part of a benefaction to the endowment of a scholarship in orthopædic surgery and hopes this will attract and be of value to those who are specializing in the latter work. He knows what coöperation has accomplished for his achievements. While his success has been chiefly, perhaps, in the motor industries, his analysis of the opportunities has brought him into related productions and with all of that he has recognized the human life of the plants as very important.

The gift to Oxford of £1,225,000 for medical research brings to view his assurance and faith that narrow specialism is not for the greatest good. It is an expression of understanding medicine as a complex of many sciences, "too huge" for one mind to master; for one division to make success possible without the help of those closely related and even of those activities that, seemingly, are very remote. It is a further encouragement and advice that narrowness is a hindrance.

We had with us for many years in pharmacy one whose life was directed along related lines, who contributed in many ways to the progress of medicine and r mained a pharmacist; reference is made to our late fellow-member, Sir Henry Wellcome. While recent benefactions have brought these thoughts to mind, this country has produced many who were and are eminently successful in business and industrial life, have realized on their opportunities in doing greater good and have set examples for others to shape their efforts accordingly. It is a like thought that is showing up more and more in the plan of coöperation of medicine and pharmacy and when this motive for coöperation takes hold, without the stronger promptings of selfishness than human limitations impose, we may look for success, and develop a greater service for medicine and pharmacy. Pharmacy, undoubtedly, has its shortcomings but recognizes the possibilities of rendering better service; these situations exist in all professions and other activities and should not overburden progress. The plan referred to and being promoted is for betterment; there will always be such opportunities, but now is the time for this promotion.

Quoting from an editorial in the *New York Times* of recent date, "What if all the resources of physics, chemistry, genetics and even mathematics were mustered in a combined attack on disease. There is reason to believe that medical progress would be more rapid. It is not that the 'ancillary sciences'—they are more than that—have been utterly neglected by medical research, but that they have been not systematically drafted into service by the lone hero of science, the genius of the laboratory, the single gifted virtuoso of cultures, vaccines and hormones. This is laid entirely to human limitations. Medicine, now a complex of many sciences, is too huge for one mind to master."

Pharmacy has made its surveys—how many times medicines have been used, which in a way proves the value; standards have been determined, which speak for purity—now let there be coöperation of the divisions of medicine, that will bring about greater success.

SELFISHNESS AND COUNTERACTION.

IT IS usually true, if not always, that the good is checkered with evil, the helpful efforts with hindrances, the malevolent with benevolent. This obtains even when honor and health are at stake; in China, where it seemed that opium production would soon be held near to medical needs, chaotic conditions have brought back the poppy fields, with the result that China now grows by far the larger part of the world's raw opium; and clandestine factories, nearby, concentrate the derivatives.

The result is, many of the people of the section of the world in which opium is being produced for unlawful gain, are being destroyed mentally, morally and physically; and those who gain from investments that are damaging the character of a nation, and many of a number of nations, are becoming more and more defiled.

It is not necessary to bring these conditions to the attention of pharmacists, as from earliest induction they are impressed with the responsibilities in connection with the dispensing of narcotics; but it is referred to here as a point of the comment. Foremost citizens of the world have endeavored to assist a weak people in the efforts of freeing themselves from narcotic addiction, and then come the destroyers of good thought and action. The effect of this extends to all of the world in larger smuggling ventures and in bringing information to addicts and prospective users. Continued observance by pharmacists should be emphasized by watchfulness of the laity and in support of the officers, who are engaged in searching out the criminals, whose acts are often planned under the influence of narcotics.

Control of cocaine addiction has its difficulties. It has been only a few years since the use of Marihuana has escaped what was known as "restricted territory;" now it is sometimes cultivated within metropolitan sections.

In one way or another, man seeks to find something that will mysteriously do something to him; what, he does not know, but the narcotics are in the group that appeal. On the side are those wise enough to keep away from using the narcotic, but using the victims for their gain.

PHARMACY WEEK.

NEWSPAPERS, the radio services and citizens in high stations, including the President, have expressed their valuation of Pharmacy Week, and pharmacists have responded in presentations that reflect credit on them and the profession. Many elaborate programs were featured. An unusual one connected up the history of pharmacy in Opera selection and piano solos. Another linked the history of early American homes with modern botanic gardens. In like manner perhaps hundreds of splendid programs could be complimented, and, in particular, the windows which featured pharmacy.

The comment on these worthy accomplishments is, they are subjects for continued efforts with ideals to be exemplified in professional conduct and service, continued studies and working with others in a common cause for improvement and advancement in prevention and treatment of disease. Without such determination and purpose the full value of Pharmacy Week to pharmacy is not obtained, but with these studies as a basis pharmacy profits more, and each annual occasion becomes of greater significance.

Appreciation is expressed to those who participated in the work of this year and congratulations are extended to pharmacists in all sections of the country, who were eminently successful in telling the story of pharmacy in their respective communities.

PHARMACOPŒIAL NEWS.

APPOINTMENT TO VITAMIN BOARD.

Dr. E. V. McCollum, of the School of Hygiene and Public Health of Johns Hopkins University, Baltimore, Md., has just been appointed a member of the U. S. P. Vitamin Advisory Board. Dr. McCollum's appointment fills the vacancy created by the death of Dr. Lafayette B. Mendel.

PHARMACOPŒIAL REFERENCE STANDARDS NOW AVAILABLE.

The Board of Trustees of the U. S. Pharmacopœial Convention have just announced the availability of all U. S. P., Eleventh Revision, Reference Standards. These are listed in the Pharmacopœia on pages 485–486. These consist of Reference Aconitine, Reference Cod Liver Oil, Reference Digitalis Powder, Ergotoxine Ethanesulfonate, Ouabain, Reference Pepsin and the Standard Powdered Posterior Pituitary described in the U. S. P. XI, on page 218, and also the Standard Epinephrine Hydrochloride, see U. S. P. XI, page 207.

These Reference Standards are distributed through the office of the Chairman of the Committee of Revision, E. Fullerton Cook, 43rd Street and Woodland Avenue, Philadelphia, Pa. The price fixed by the Board for these Standards is $1.00 each, or $10.00 for twelve. The Board of Trustees are also distributing the Standards for Vitamin A and Vitamin D in the form of Reference Cod Liver Oil of known Vitamin A potency, and a Reference Cod Liver Oil of known Vitamin D potency. This potency is expressed in terms of the U. S. P. and International units. This Reference Oil is distributed from the same office at $2.50 for each 30-cc. package.

REPRINTS OF A. M. A. ARTICLES ON "THE PHARMACOPŒIA AND THE PHYSICIAN."

Reprints of these articles will be available, after publication in the *A. M. A. Journal*. Details can be obtained through writing to the office of the Chairman of the U. S. P. Committee for Revision.

THE SYNONYM FOR ACETOPHENETEDIN.

The synonym for Acetophenetedin is changed to "*Acetphen*," which was the U. S. P. X synonym.

The new U. S. P. XI synonym conflicts with a trade-marked name.

SCIENTIFIC SECTION

BOARD OF REVIEW OF PAPERS.—*Chairman*, F. E. Bibbins; H. M. Burlage, W. G. Crockett, E. V. Lynn, C. O. Lee, L. W. Rising, L. W. Rowe, Heber W. Youngken, F. V. Lofgren, J. C. Krantz, Jr.

CULTIVATION OF EPHEDRA IN SOUTH DAKOTA.*,[1]

BY B. V. CHRISTENSEN[2] AND LOVELL D. HINER.[3]

Ephedra sinica seed for trial planting was received from Peking Union Medical College in 1929, and the first planting made in the greenhouse on November 6th of the same year. Germination was excellent by November 20th, and on May 15, 1930, 73 thriving ephedra plants were potted, and on June 30, 1930, these were transplanted into the medicinal plant garden. The following winter the plants were moved into the root cellar for protection and were again set in the garden plots in the spring of 1931. That fall the first cutting of stems was made, and thereafter the roots were allowed to remain in the ground undisturbed during the winters of 1931–1932 and 1932–1933. Such was the status of ephedra in South Dakota at the time the writer became interested in its possibilities as a domestic drug crop.

As proof of the hardiness of the ephedra plants, the writer simply calls to your attention their survival of those memorable years of the "ghastly black blizzard," when the average annual rainfall would not average more than a dozen inches, and the winter of 1935–1936, pronounced the coldest for South Dakota in 50 years. On many occasions the top soil was blown from the plants until they were anchored only by the tip ends of their long sturdy tap roots, but in spite of this they continued to thrive. Small wonder, then, that this plant attracted considerable attention. Furthermore, it is well known that there is no domestic source of supply for this very important crude drug. These considerations prompted the selection of this problem for an original research project, namely, the determination of the possibilities of commercial production of ephedra in South Dakota.

A problem of this sort logically involves two important points, namely, the methods of propagation and cultivation best adapted to handling such a crop, and the methods and proper time of harvesting and the methods of curing which will insure the highest yield possible of the active principle, ephedrine. The fourth season of systematic investigation of these plants is now being completed.

Propagation and cultivation of ephedra appears to be not too difficult a matter, for the plants reproduce from seeds, and also from runners which develop into several sturdy plants that mature rapidly. These new plants transplant very well, by severing them from the old root and allowing them to remain undisturbed for about three weeks before moving them to their new location. This allows ample time for their own root systems to develop and assures greater success in trans-

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* Scientific Section, A. PH. A., Dallas meeting, 1936.

[1] This paper prepared from data collected toward the fulfilment of the Ph.D. thesis requirements of the University of Florida, School of Pharmacy.

[2] Director, School of Pharmacy, University of Florida.

[3] Assistant Professor of Pharmacognosy and Pharmacology, South Dakota State College, Division of Pharmacy.

planting than when they are moved immediately after cutting the runners. As for the seed, it is best handled by planting it outside in rows where it can be cultivated until the plants are at least two years old, at which time they are well enough developed to transplant into the field at the desired spacing. Ephedra as it matures undisturbed, resembles very much the ordinary alfalfa crop in its growth habits. It roots deeply, and spreads by runners to form a sod which soon eliminates the necessity for cultivation except for hand weeding, all of which makes for easy production of the crude drug.

The soil adaptations of ephedra leaves much to be determined by research into this phase of its cultivation. The plants thrived so well during the drought that it suggested the possibility of their being introduced into the marginal region of the state, particularly of the Bad Lands section. With the limited funds available, however, only one test plot of this type has been established. Stems returned from this plot, which happens to be in the Bad Land region, compared favorably with

Test plots of Ephedra sinica, Division of Pharmacy, Medicinal Plant Garden, South Dakota State College, Brookings.

those produced in eastern South Dakota. They were smaller in size, but the plants were healthy and well established in the light sandy soil. Two-year old stems from this plot assayed 0.347 per cent ephedrine, indicating that ephedra may be suited to a section of the state which is at the present time almost unproductive. The experimental plots in eastern South Dakota are planted in well-drained rich black loam. Hence, even with much left to be done on the soil problem, production of ephedra seems practically assured, leaving the problem of harvesting and curing the herb as the next important step.

The first harvest was used for the determination of the time of year the cuttings should be made, and for the determination of the normal alkaloidal content of the stems. Harvesting was begun on September 13, 1933, and one cutting made each week until six successive cuttings had been completed. By this time heavy frost had checked further development of the plants. These cuttings were oven cured and assayed with the following results:

TABLE I.

1933 Harvest Dates.	Care.	Assay.
1. September 13th	Oven dried	0.0737%
2. September 20th	Oven dried	0.0935%
3. September 27th	Oven dried	0.0977%
4. October 4th	Oven dried	0.0894%
5. October 11th	Oven dried	0.0725%
6. October 18th	Oven dried	0.0792%
7. October 4th[1]	Sun cured	0.126%

A study of the above table revealed three points of particular interest. It showed:

1. The alkaloidal content of the one-year old stems to be exceedingly low.
2. It further suggested that the proper time to cut ephedra was around the latter part of September or the first of October, and also, since the October 4th[1] cutting which was cured on the ground where it fell when cut contained the highest per cent of ephedrine.
3. It suggested that perhaps the proper way to handle ephedra might be to cut and cure it like ordinary hay crops, rather than to oven cure it.

The main concern at this time, however, was over the extremely low ephedrine content.

Further results along the above lines were obtained from the 1934 crop as shown in Table II.

TABLE II.

1934 Harvest Dates.	Care.	Assay.
1. September 27th	Sun cured	0.1501%
2. September 27th	Shade cured	0.1487%
3. September 27th	Oven cured	0.1321%
4. October 11th	Sun cured (frosted)	0.1509%

The above ephedra stems again represented one season's growth for they were all cut back the preceding fall. The findings of this season corroborated those of the year before, mainly:

1. That the alkaloid content was extremely low for single-year stems.
2. That probably the best time to harvest ephedra would be the latter part of September, since there is danger of damaging frosts around the first part of October.
3. That the stems left in the field to cure in the sun contained the highest per cent of ephedrine.

It was evident from the assays figures, that some improvement in quality would have to be made to justify a continuation of the project.

Realizing the futility of attempting to increase the alkaloid content simply by growing and harvesting the stems year after year, the writer became interested in discovering some new procedure which would increase the existent low alkaloidal assay. It was evident, too, that if such could be done, the more natural the process involved, the more valuable it would be, since if ephedra was to become a commercial crop, its production must be as easy as possible. A review of literature disclosed the fact that originally the plants were not cultivated, for the Chinese had long been gathering the drug from its natural habitat in the wild state. It appeared possible, then, that the stems were perennial, and that the ephedrine content of about one per cent had developed gradually in the maturing of the stems for several years.

A careful survey of the garden records for the several years past, showed conclusively that ephedra *roots* were hardy and perennial when left undisturbed, but the records also revealed that the *stems* had never been left uncut for two seasons to determine if they too were perennial in this climate. Accordingly, four test plots were left uncut in the fall of 1934 to determine what the condition of the stems would be in the spring of 1935. These beds contained enough plants so some could be left to mature through their fourth year if it was desired.

The progress of the stems during the winter was carefully noted. They remained upright, and except for developing a slightly black coloration, looked perfectly normal. Their fracture was brittle and green, the color resembling very markedly that of the fresh growing stems in mid-summer. Very early the next spring they regained their normal succulence and green color, and further, there was promise of an increased stem production due to the profuse branching from each node of the old stem. The per acre yield of stems in the fall of 1935 showed that nothing had been lost in crop weight by allowing the stems to mature this extra season, for the branching of the old stems compensated for the lost cutting.

This in itself was particularly gratifying; besides, there was the possibility of an increased seed production to hasten propagation, as well as the possibility that maturing the stems might increase the ephedrine content. By the middle of May, seed production was well advanced, which promised plenty of time for the seeds to mature, where heretofore they had just escaped frost. Seed production from the second-year stems showed an increase of 66 per cent by weight over the best figures ever obtained from stems one season old. This, too, was gratifying, and the question then remained, has the ephedrine content increased, and if so, enough to encourage production?

Cuttings of the two-year old stems were begun on September 23, 1935, followed by three successive harvests at weekly intervals. These were cured and assayed with results shown in Table III.

TABLE III.

1935 Harvest Dates.	Care.	Assay.
1. September 23rd	Sun cured	0.364%
2. September 23rd	Shade cured	0.361%
3. September 30th	Sun cured	0.363%
4. September 30th	Shade cured	0.366%
5. October 5th	Sun cured	0.364%

Cuttings were also made in 1935 from stems that had matured but one season, *i. e.*, they were the stems produced the summer of 1935 from plants harvested in 1934. The results of these harvests are shown in Table IV.

TABLE IV.

1935 Harvest Dates.	Care.	Assay.
1. September 23rd	Sun cured	0.153%
2. September 23rd	Oven cured	0.083%
3. September 30th	Sun cured	0.152%
4. September 30th	Shade cured	0.150%

Table IV substantiates the findings of Tables I and II; that the stems pro-

duced by a single season's growth run extremely low in ephedrine, and further suggests that even moderate heat in oven curing the herb is detrimental to its alkaloidal content.

Table III, however, contained the most promising information of all. By simply allowing the perennial stems to mature this extra season, the ephedrine content increased 144 per cent over the highest figure ever obtained from the single-season stems. Those stems which were left on the ground outside cured so nicely that it assures ease in cutting and caring for the stems.

Aging the ephedra stems an extra season, then, was found to be decidedly encouraging for the following reasons:

1. It increased stem production.
2. Seed production increased 66 per cent.
3. It increased the ephedrine content.

How far the natural phenomena will continue to advance, of course, remains to be determined by continued experimentation. From data thus far obtained it is possible to suggest the following conclusions:

1. *Ephedra sinica* stems and roots are both hardy and perennial in South Dakota.

2. The plants produce viable seeds, assuring rapid propagation both from these, as well as from numerous runners that develop into new plants.

3. The crop may be handled like any ordinary hay crop, by cutting it with mowers, allowing it to cure in the field, and then bale for shipment.

4. The proper time for harvesting favors late September, since damaging frosts are expected by October first.

5. The undisturbed plants spread to form a sod which eliminates cultivation except for hand weeding.

6. Stems produced in a single growing season are small, bear few seeds and run low in ephedrine content.

7. Maturing the stems for a second growing season increased stem production from the nodes of the old stems, stimulated seed production, and increased the ephedrine content.

8. The best assay figure obtained thus far is still considerably below that of the imported drug, but in case of an emergency, ephedra of fair quality could be produced in South Dakota.

THE ASSAY OF MONOETHANOLAMINE IN THE PRESENCE OF THEOPHYLLINE.*

BY ASA N. STEVENS.[1]

The pharmaceutical literature does not appear to provide a method for the determination of monoethanolamine in mixtures containing the various xanthine derivatives. In an effort to develop a satisfactory procedure for the estimation of monoethanolamine in the presence of theophylline the following experiments were made.

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* Scientific Section, A. PH. A., Dallas meeting, 1930.

[1] Control Laboratories, Eli Lilly and Company.

EXPERIMENTAL.

Solution A.—A solution prepared by dissolving 15 cc. of monoethanolamine in sufficient distilled water to make 100 cc. A 5-cc. portion of this solution required 26.60 cc. of *N*/2 HCl for complete neutralization in the presence of methyl orange. Since 1 cc. of *N*/2 HCl is equivalent to 0.0305 Gm. of monoethanolamine it follows that in each cc. of Solution A there is 0.1623 Gm. of monoethanolamine.

1. To 1 Gm. of theophylline add 19.30 cc. of Solution A and warm on a steam-bath. Cool and titrate with *N*/2 HCl using methyl orange indicator.

2. To 1 Gm. of theophylline add 0.95 cc. of Solution A and warm on a steam-bath. In this case some of the theophylline remained in suspension. Cool and titrate with *N*/2 HCl using methyl orange indicator.

3. To 1 Gm. of theophylline add 2.0 cc. of Solution A. Warm on a steam-bath. Cool and titrate with *N*/2 HCl using methyl orange indicator.

The results obtained in these experiments were as follows:

TABLE I.

Experiment No.	Cc. *N*/2 HCl Required.	Monoethanolamine (Calculated) Grams.	Monoethanolamine (Found) Grams.
1	102.80	3.13	3.13
2	5.20	0.154	0.158
3	10.80	0.324	0.329

In order to determine whether or not the results shown in Table I would be of value in analytical control determinations a number of samples containing theophylline and monoethanolamine were assayed for their ethanolamine content. One of the samples contained starch as an added inert material. The results appear in Table II.

TABLE II.

Sample No.	Sample Wt. Grams.	Starch Grams.	Cc. *N*/2 HCl Required.	Monoethanolamine (Calculated) %.	Monoethanolamine (Found) %.
A	0.775	...	6.40	25.41	25.19
A	0.630	...	5.20	"	25.17
B	0.833	...	6.90	"	25.26
B	1.548	...	12.90	"	25.41
C	1.634	...	13.60	"	25.38
D	1.072	...	8.95	"	25.46
E	1.000	1.0	8.40	"	25.62

COMMENTS.

The indications are that this method may also be extended to include the determination of pure diethanolamine and pure triethanolamine in mixtures with other materials. No analytical results have yet been obtained by the author in the estimation of these two compounds.

CONCLUSION.

Evidence has been presented to show that monoethanolamine may be determined in the presence of theophylline and starch by titration with standard hydrochloric acid in the presence of methyl orange as an indicator.

The possibility of assaying other compounds of a similar nature by using the same procedure has also been suggested.

QUINONE FORMATION IN THE THALLEIOQUIN REACTION—A NEW PREPARATION OF QUINOLINE-o-QUINONE.*

BY GEORGE W. HARGREAVES.[1]

The mechanism of the well-known thalleioquin reaction for the detection of quinine has been the subject of many investigations (1, 2, 3, 4). Quinone formation in the quinoline nucleus has been quite generally recognized. This view is supported by the analogous color reactions of quinoline-*o*-quinone and 5,5-dichloro-6-ketoquinoline. Quinoline-*o*-quinone has previously been prepared by the oxidation of 5-amino-6-hydroxyquinoline (4, 5), and the dichloro-keto-compound by passing chlorine gas into a cold solution of 6-hydroxyquinoline. In neither case have these products been obtained under the same conditions that the thalleioquin reaction is undertaken. By the direct oxidation of 6-hydroxyquinoline with lead peroxide and dilute sulfuric acid, quinoline-*o*-quinone has been prepared under exactly the same conditions that the thalleioquin reaction can be produced according to the method of Pollaci (6). When a solution of the quinone sulfate is warmed with aniline, a red solution is produced. An oxidized solution of quinine reacts similarly. These facts are further evidence of quinone formation in the thalleioquin reaction. As the starting product in this investigation, 6-hydroxyquinoline has been prepared by a method which is less violent and gives better yields than the original Skraup (7) procedure.

EXPERIMENTAL.

6-Hydroxyquinoline.—A mixture of 44 Gm. of *p*-nitrophenol, 100 Gm. of anhydrous glycerol, 60 cc. of glacial acetic acid and 55 cc. of concentrated sulfuric acid is refluxed in a two-liter flask for 24 hours. The reaction proceeds smoothly and the flame need not be removed when the reaction sets in. After refluxing, the mixture is cooled and 500 cc. of water added. The product is obtained by fractional precipitation using 40% NaOH at first in order to keep the volume low and the neutralization is completed with 10% NaOH. This fractional precipitation is carried out in a two-liter beaker surrounded by a bath of cold water and the mixture is stirred vigorously with a mechanical stirrer. This causes the tarry by-products to solidify and collect, for the most part, on the stirrer and on the sides of the beaker, greatly aiding the subsequent filtration. The alkali should be added slowly, for if added too rapidly there is danger of some of the hydroxyquinoline precipitating and being carried out with the tar. The first dark colored precipitates are filtered off and the lighter colored filtrate is neutralized with 10% NaOH whereupon the hydroxyquinoline separates as a yellowish to buff colored powder. It is best to carry out the fractional precipitation in stages, that is, the addition of alkali and filtration being repeated several times until the addition of alkali produces no more dark precipitation. A large plaited filter should be used as suction filtration is impossible due to the sticky nature of the precipitates. The final product, however, can be filtered with suction and should be washed with a small amount of water. Yield 35 Gm. The product is recrystallized from 10% acetone in water using a small amount of charcoal. It forms small white prisms, m. p. 193°.

The literature suggests recrystallization from water but the solubility of the product in hot water is very low and charcoal has practically no decolorizing action in this solvent. For most reactions, the precipitated hydroxyquinoline can be used without recrystallization. No detailed study has been made of the relation between yield and time of refluxing, however, the yield is less when boiling is less than 20 hours and there is no increase in yield when boiling is extended beyond 24

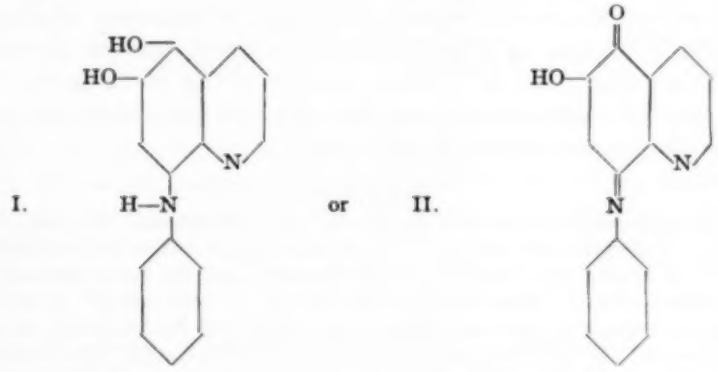
* Scientific Section, A. PH. A., Dallas meeting, 1936.

[1] Alabama Polytechnic Institute, School of Pharmacy, Auburn, Ala.

hours. This is a modification of the method developed by Cohn and Gustavson (8) for the synthesis of quinoline.

Quinoline-o-Quinone.—5 Gm. of 6-hydroxyquinoline is dissolved in 350 cc. of water and 5 cc. of concentrated sulfuric acid, 20 Gm. of lead peroxide is added and the mixture is very slowly heated to boiling and boiled for five minutes. The solution assumes a deep red color. After cooling, the mixture is filtered and then concentrated on a water-bath to about 50 cc. On standing, the sulfate of the quinone separates as a greenish brown crystalline mass. Yield 1.3 Gm. The most successful method of purifying this substance is the one originally used by Matheus (5). The quinone sulfate is converted into the more soluble hydrochloride by treatment with the calculated amount of barium chloride and reprecipitated as the sulfate.

Quinone Compound with Aniline.—0.1 Gm. of quinone sulfate is suspended in 100 cc. of boiling water and 2 drops of aniline are added and the mixture warmed for five minutes at 80°; then it is exactly neutralized with solid sodium carbonate and the heating continued until all the quinone is dissolved and a dark red solution results. Upon cooling, a mass of dark red crystalline scales is deposited. Recrystallized from water, the compound melts at 197°. According to the work of Zincke (9) and Fühner (1) this compound may have the formula:



Recent work by Kogan (10) also indicates that the 8 position is very reactive in 5,6-substituted quinoline derivatives. A single nitrogen determination by a modified Kjeldahl yielded 10.5% *N* which corresponds more closely to formula I.

Other primary amines such as the toluidines and *p*-amino-phenol apparently react with the quinone in a similar way. However, the details of the preparation of these derivatives are to be made the subject of a subsequent investigation.

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THE ASSAY OF SPIRIT OF ETHYL NITRITE, U. S. P. X–U. S. P. XI.*

BY RAY S. KELLEY.[1]

The first official assay of Spirit of Ethyl Nitrite is found in the sixth revision of the United States Pharmacopœia. By that method 10 Gm. of sample are treated with a fixed amount of potassa and the alcohol is allowed to evaporate spontaneously. The mixture, after the addition of a slight excess of diluted sulfuric acid, must discharge the color of 0.335 Gm. of potassium permanganate. Any sample meeting this specification was assumed to contain "at least 4 per cent of real Ethyl Nitrite."

The nitrometer method of assay was introduced into the seventh revision of the Pharmacopœia. In this revision the Spirit of Ethyl Nitrite was required to yield "eleven times its own volume of NO." Five cubic centimeters of sample were used which must yield 55 cc. of NO equal to about 4 per cent of Ethyl Nitrite.

The eighth, ninth and tenth revisions of the Pharmacopœia continued to recognize the nitrometer method of assay and Spirit of Ethyl Nitrite was required to contain an average of 4 per cent Ethyl Nitrite.

The eleventh revision of the Pharmacopœia discontinues the use of the nitrometer and introduces a titration method for the assay of Spirit of Ethyl Nitrite. Both the nitrometer method and the titration method of assay depend upon the reaction between Ethyl Nitrite, potassium iodide and a mineral acid with the liberation of nitric oxide and iodine. The former method measures the volume of nitric oxide evolved from a definite weight of sample and from this volume of gas the per cent of Ethyl Nitrite is calculated. The present titration method determines the per cent of Ethyl Nitrite by direct titration of the iodine liberated from a definite amount of sample.

For the purpose of this investigation each sample of Spirit of Ethyl Nitrite was assayed by three different methods.

Method I.—Twenty-five cubic centimeters of sample were introduced into a tared 100-cc. volumetric flask, containing 20–30 cc. of alcohol, and the weight of the sample determined. The volume was made up to 100 cc. with alcohol; 10 cc. of this solution were introduced into a Bradley nitrometer, previously filled with a saturated solution of sodium chloride. Ten cubic centimeters of a 20 per cent solution of potassium iodide were then added followed by 5 cc. of sulfuric acid, T.S. After the gas ceased to be evolved, in about one hour, the volume of gas was determined at room temperature. Each cc. of NO is the equivalent of 0.00307 Gm. Ethyl Nitrite, C_2H_5ONO.

Calculation: $\frac{0.00307 \times (\text{cc. NO}) \times 100}{1/10 \times (\text{weight of sample})}$ = per cent C_2H_5ONO. Correction was then made for any variation of temperature or pressure from the standard.

Method II.—(U. S. P. XI method.) The specific gravity of the sample was determined at 25° C. by means of a pycnometer. The apparatus to be used in the assay consisted of a 300-cc. Erlenmeyer flask fitted with a 2-hole rubber stopper. An aeration tube, tapered to an internal diameter of about 1 mm. at the lower end and leading to the bottom of the flask, was passed through one hole in the stopper. Through the other hole was passed a glass tube of about 6-mm. internal diameter and extending about 1 cm. above and below the stopper. The aeration tube was connected with a cylinder of air-free carbon dioxide.

Ten grams of potassium iodide and 40 cc. of boiling distilled water were placed in the flask and a stream of carbon dioxide, about five bubbles per second, was passed through the solution

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* Scientific Section, A. PH. A., Dallas meeting, 1936.

[1] Assistant Professor of Chemistry in the Massachusetts College of Pharmacy.

until it had cooled to room temperature. Then 10 cc. of hydrochloric acid (1 in 2) were added to the contents of the flask and the stream of carbon dioxide was continued for at least three minutes, and any color produced by liberated iodine was discharged by the careful addition of tenth-normal sodium thiosulfate through the outlet tube. The flow of carbon dioxide was decreased to about two bubbles per second and 10 cc. of sample were added from a pipette. This was accomplished by passing the pipette through the outlet tube until the tip was just above the surface of the potassium iodide solution. The adhering nitrite solution was removed by touching the tip of the pipette to the outlet tube and then rinsing the outlet tube with a fine jet of aldehyde free alcohol. The liberated iodine was at once titrated with tenth-normal sodium thiosulfate by introducing the tip of the burette through the outlet tube. Each cc. of tenth-normal sodium thiosulfate is the equivalent of 0.007505 Gm. of Ethyl Nitrite. Calculation:

$$\frac{0.007505 \times (\text{cc. } 0.1\ N\ Na_2S_2O_3) \times 100}{10 \times (\text{specific gravity of sample})} = \%\ C_2H_5ONO.$$

Method III.—The apparatus and method is similar to Method II with the following change. Twenty-five cubic centimeters of sample were introduced into a tared 100-cc. volumetric flask containing 20–30 cc. of alcohol and the weight of sample determined. The volume was made up to 100 cc. with alcohol and 10 cc. of this dilution were introduced into the Erlenmeyer flask and the liberated iodine at once titrated with tenth-normal sodium thiosulfate. Each cc. of tenth-normal sodium thiosulfate is the equivalent of 0.007505 Gm. of Ethyl Nitrite. Calculation:

$$\frac{0.007505 \times (\text{cc. } 0.1\ N\ Na_2S_2O_3) \times 100}{1/10 \times (\text{weight of sample})} = \%\ C_2H_5ONO.$$

The following table shows the results obtained in the assay of Spirit of Ethyl Nitrite by the three methods described above:

TABLE OF RESULTS.

Sample.	Specific Gravity at 25° C.	Per Cent of Ethyl Nitrite Found. Method I.	Method II.	Method III.
1	0.8119	3.87	4.22	4.31
2	0.8124	4.03	4.10	4.22
3	0.8120	4.64	4.41	4.64
4	0.8120	4.25	4.21	4.60
5	0.8112	3.80	3.89	4.20
6	0.8123	3.79	3.69	3.98
7	0.8119	3.89	3.95	4.13
8	0.8117	4.12	4.34	4.68
9	0.8124	5.22	4.97	5.38
10	0.8128	4.48	4.36	4.75
11	0.8118	4.26	4.15	4.57
12	0.8124	4.05	4.07	4.39

CONCLUSIONS.

Method I.—This method is essentially that of the tenth revision of the United States Pharmacopœia. The actual time spent in carrying out the assay is somewhat less than that for the titration method. The results on duplicate assays check within 0.2 cc. of nitric oxide gas evolved.

Method II.—Gas was evolved through the sample when measured at 25° C. Iodine was liberated through the outlet tube when the sample came in contact with the acid potassium iodide solution in the flask. A variation of from 0.1 to 0.7 cc. of tenth-normal sodium thiosulfate was noted in the titration of duplicate samples. These three factors were especially noticeable in samples containing more than 4 per cent of Ethyl Nitrite.

Method III.—This modification seems to overcome the difficulties noted under Method II. The calculations are based on the actual weight of sample used rather

than on a weight calculated from the specific gravity. A variation of 0.1 cc. of tenth-normal sodium thiosulfate was the maximum noted in duplicate assays.

THE PRESERVATIVE CAPACITY OF SODIUM FORMALDEHYDE SULFOXYLATE IN CERTAIN MEDICINAL PREPARATIONS.*

BY JOHN C. KRANTZ, JR., C. JELLEFF CARR AND RUTH MUSSER.[1]

Recently sodium formaldehyde sulfoxylate has been employed in the treatment of bichloride of mercury poisoning in experimental animals and man by Rosenthal (1 and 2). This work has conferred therapeutic prominence upon this compound. In working with this substance in a study of its effect in rat sarcoma (3) the authors became interested in its properties as a reducing agent in the preservation of medicinal preparations. The stability of sodium formaldehyde sulfoxylate in acid and alkaline solutions has been studied by Jurist and Christiansen (4).

MATERIALS AND METHODS.

The sodium formaldehyde sulfoxylate was obtained through the courtesy of Joseph Rosin, Merck and Co. Inc. of Rahway, N. J. The solutions studied under laboratory conditions in flint glass bottles were:

1. Epinephrine (in normal salt solution), 1–10,000
2. Physostigmine Salicylate, 0.2 per cent
3. Physostigmine Hydrochloride, 0.2 per cent
4. Morphine Sulfate, 1 per cent
5. Glycerite of Phenol
6. Solution of Resorcinol, 1 per cent
7. Sodium Bicarbonate-Sodium Salicylate, 6 per cent each.

To each of these solutions was added sodium formaldehyde sulfoxylate in concentrations of 1–500, 1–1000 and 1–5000, respectively. Observations for changes in color were made at 15-day intervals over a period of four months.

RESULTS.

Over the four-month period all solutions containing sodium formaldehyde sulfoxylate as a preservative in each concentration employed prevented color change. On the other hand the control solutions in each instance showed signs of color change from within one to four weeks. The characteristic color changes produced by oxidation were not found in any of the preserved solutions.

DISCUSSION.

The preservation of epinephrine solution has been the source of a considerable amount of investigation. Quite recently ascorbic acid has been employed for this purpose (5). In view of the fact that the pharmaceutical elegance of the preparation was preserved it was decided to test its medicinal potency. Under ether anesthesia, intravenous injections were made into dogs and the carotid blood pressure was measured. The results are shown in Table I. A study of

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* Scientific Section, A. PH. A., Dallas meeting, 1936.

[1] Department of Pharmacology, School of Medicine, University of Maryland.

TABLE I.

INFLUENCE OF EPINEPHRINE PRESERVED WITH SODIUM FORMALDEHYDE SULFOXYLATE UPON THE BLOOD PRESSURE OF A DOG.

8.6 Kg. Dog—Ether Anesthesia.

Epinephrine, 1:33,000.	Blood Pressure Mm. Hg. Before.	After.	Change, Mm.
1 cc. freshly prepared	152	170	+18
1 cc. from "Control Sample"	156	160	+ 4
1 cc. with 1:500 S.F.S.	155	155	..
1 cc. with 1:1000 S.F.S.	155	155	..
1 cc. with 1:5000 S.F.S.	154	154	..
1 cc. with 0.6 mg. S.F.S.	146	154	+ 8
1 cc. with 5 cc. 10 per cent S.F.S.	144	156	+12
1 cc. with 1 cc. 10 per cent S.F.S. 10 min. after mixing	144	154	+10
1 cc. freshly prepared	148	164	+16

Table I indicates that although sodium formaldehyde sulfoxylate protects epinephrine solutions against color change through oxidation, it simultaneously destroys its pressor response. The control solution, although red, retained some of its pharmacologic activity. The simultaneous injection of sodium formaldehyde sulfoxylate in 5 to 10 per cent solution with epinephrine did not obliterate the response of the latter. Mixing in the syringe prior to injection did not alter the epinephrine response. Apparently prolonged contact of the two compounds is necessary for sodium formaldehyde sulfoxylate to destroy the pharmacologic response of epinephrine.

With physostigmine solutions, myotic tests on the rabbit's pupil indicated full activity of the control solution which was definitely pink and those preserved with sodium formaldehyde sulfoxylate which remained devoid of color.

The sodium bicarbonate-sodium salicylate mixture is exceedingly interesting. As little as 1–5000 solution of sodium formaldehyde sulfoxylate preserves this well-known unstable mixture for at least four months. In the control solution definite darkening occurs within four days and within a month the bottle contains a black precipitate. As sodium formaldehyde sulfoxylate is a powerful reducing agent and exhibits a nearly neutral reaction, its preservative influence on this mixture of sodium bicarbonate and sodium salicylate again indicates that this change is an oxidative phenomenon as previously shown by two of the authors (6 and 7).

It is well known that sodium formaldehyde sulfoxylate solutions themselves undergo deterioration quite rapidly with the development of an alliaceous odor and a diminution of its reducing properties. Furthermore, the solution becomes quite acidic. The deterioration of a 1 per cent solution with respect to time was determined under laboratory conditions; one solution was preserved in distilled water, the other in a phosphate buffer p_H 6.2. The diminution of the reducing properties was determined by titration with tenth-normal iodine. Chart I shows these effects.

CHART I.

An examination of Chart I indicates that the deterioration of the solution of sodium formaldehyde sulfoxylate is accompanied by the production of strongly

dissociated acid. If this acid is buffered the deterioration is retarded until the buffer capacity of the buffer salts is depleted, then the diminution in reducing power rapidly diminishes. It is possible that further studies along this line might be productive of a stable solution of this salt for intravenous medication.

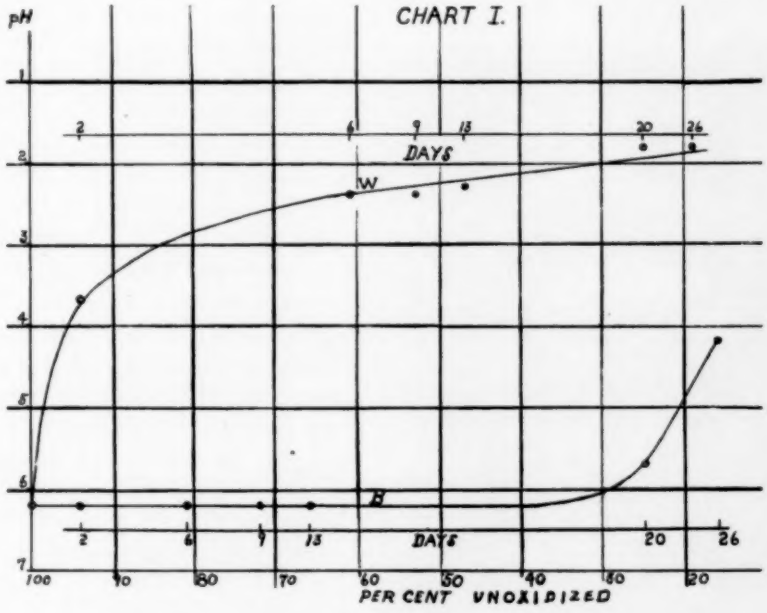
SUMMARY.

(1) Sodium formaldehyde sulfoxylate has been employed in certain medicinal preparations as a preservative. In concentrations of 1–5000, in which the alliaceous odor of its products of decomposition are not perceptible, the compound serves effectively as a preservative.

(2) The presence of sodium formaldehyde sulfoxylate in epinephrine solutions, upon standing, preserves the pharmaceutical elegance of the solutions but obliterates its pressor response.

(3) The buffering of solutions of sodium formaldehyde sulfoxylate to p_H 6.2 with phosphates retards their rate of deterioration.

CHART I.



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THE DETERMINATION OF ALCOHOL IN PHARMACEUTICAL LIQUIDS. II. A NEW METHOD.*

BY KARL BAMBACH AND T. H. RIDER.[1]

In a previous paper (1) a study of the United States Pharmacopœia X and XI methods for the determination of alcohol in pharmaceutical liquids was described, with especial emphasis upon the procedures used in the presence of volatile substances other than alcohol and water. It was shown that these procedures consume much manipulative time and tend to give low results, and that a speedy, accurate method is badly needed.

The application of an apparatus similar to the Dean and Stark receiving flask (2), originally devised for the determination of water in petroleum and coal tar products, led to the development of a new procedure for alcohol assays. The alcohol, together with an immiscible solvent and water, is distilled from the sample and collected in a graduated receiver. Since the alcohol-water mixture and immiscible solvent are distilled together, there is a continual washing action. This entirely removes from the distillate such substances as are preferentially soluble in the immiscible solvent and which might otherwise interfere with the assay. This procedure gave uniformly accurate and reproducible results, especially striking in cases where the U. S. P. X and U. S. P. XI methods gave low results (1).

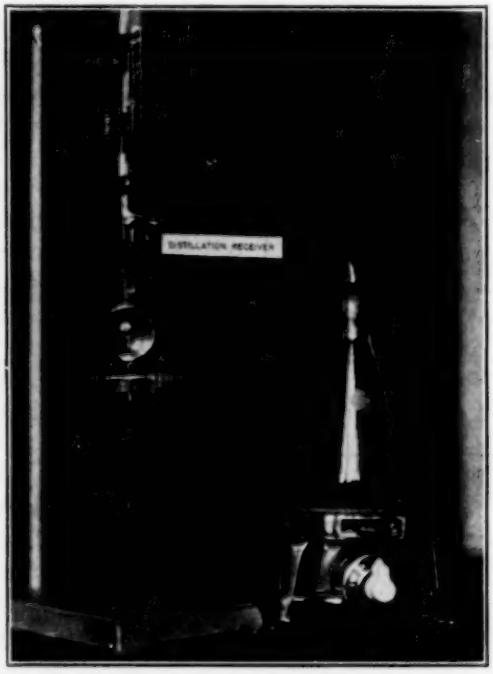

Fig. 1.—Distillation receiver.

EXPERIMENTAL.

The necessary apparatus consists of a 500-cc. Erlenmeyer flask, a condenser (the Hopkins type is best), an electric hotplate and a special distillation receiver. This distillation receiver is the only piece of special apparatus needed; it is simple and easily made and can now be obtained[2] under the name of "Merrell Alcohol Distillation Receiver." A round-bottomed flask and gas burner could be used instead of the Erlenmeyer flask and electric hotplate, but the latter is preferable from the viewpoint of safety.

The set-up of the apparatus, together with the appearance of the special distillation receiver, can be seen in the photograph. The measured sample, 50 cc. of water, and 25 cc. of heptane are put in the Erlenmeyer flask, the receiving flask filled almost to the 50-cc. mark with heptane and the apparatus connected.

Commercial heptane, boiling range approx. 90–100° C., is a satisfactory im-

* Scientific Section, A. PH. A., Dallas meeting, 1936.

[1] From the Laboratories of The Wm. S. Merrell Co., Cincinnati, Ohio.

[2] The Wilkens-Anderson Co., Chicago, Illinois.

miscible solvent. It is cheap, has the proper boiling range and solubility behavior, and it carries the distillation along at a convenient speed. The expense connected with its use is slight since it can be recovered very easily and used repeatedly.

As a general rule, when it is suspected that the preparation to be tested contains less than 40% of alcohol, a 50-cc. sample should be used. If it is suspected that the liquid contains more than 40% of alcohol, or if the results of an assay carried out with a 50-cc. sample are over 42%, a 25-cc. sample should be used. This is in accordance with the conclusions reached in our previous paper on this subject. In some cases, where a relatively large quantity of an interfering contaminant is present, it is advisable to take 25 cc. or even only 10 cc. for the sample.

TABLE I.

Contaminant.	Sample of Known Alcohol.	Correct Alcohol Content.	Alcohol Content. U. S. P. XI Method.	Alcohol Content. New Method.
0.5 cc. Oils for F. E. Cascara Aromatic (anise, cinnamon, coriander, methyl salicylate)	50 cc.	17.5%	17.0%	17.5%
			16.7%	17.4%
1 cc. Chloroform	50 cc.	17.5%	16.7%	17.6%
			16.6%	17.4%
0.15 cc. Oils for Elixir Aromatic (orange, lemon, coriander, anise)	50 cc.	17.5%	17.1%	17.5%
			16.8%	17.5%
1 cc. Chloroform	25 cc.	50.0%	49.1%	50.0%
			48.7%	49.8%
1.5 Gm. Powdered Soap and 0.5 cc. Oil Rosemary (and excess sulfuric acid)	25 cc.	50.0%	49.4%	50.0%
			49.2%	50.2%
None, but using the petroleum benzin shakeout in the U. S. P. XI method as if a contaminant were present	25 cc.	50.0%	49.7%	50.0%
	25 cc.	77.8%	77.2%	77.7%
0.3 cc. Oils for Aromatic Spirit of Ammonia (lemon, lavender, myristica)	25 cc.	77.8%	76.2%	77.7%
			76.6%	78.0%

It is advisable to shield the receiving flask from the heat of the hotplate with a square of asbestos. The distillation proceeds until the receiving flask contains about 48 cc. of alcoholic distillate; this usually takes from 30 to 45 minutes. The apparatus is disconnected and the distillate, which is usually rather warm, is cooled to the temperature at which the sample was measured before it is made up to exactly 50 cc. by dropping water into the flask. This temperature control is easily accomplished by having a large water-bath at room temperature in the laboratory. Samples and distillates can be quickly brought to room temperature by immersion in this bath and, if the body of water is large enough, no ordinary fluctuations in laboratory temperature will cause serious change in the temperature of the water during the course of the distillation. After the alcoholic distillate is made up to volume it is drained through the stop-cock into a dry container, separating the lighter immiscible solvent as would be done in a separatory funnel. The entire alcoholic distillate must be drained into a dry container and very thoroughly mixed; this is an important and necessary step. After thorough mixing, the specific gravity is determined in the usual way and by reference to

the proper tables the alcohol content can be found. Frequently the distillate is slightly hazy, presumably due to the suspension of minute droplets of heptane in the alcohol-water mixture. Upon standing over night these droplets will rise to the top, leaving a clear liquid; however, no significant difference could be detected when alcohol determinations were run before and after clearing, so that in practice it is not necessary to allow the liquid to clear.

Samples of known alcohol-water mixtures were contaminated with various volatile substances commonly found in official products and attempts were then made to determine the alcohol content of the original alcohols by the U. S. P. XI (4) method and this new method. The details of the procedures used are described in the previous paper (1) and in the above paragraph. The results of the U. S. P. XI assays, taken from the previous paper, will be repeated here in order to facilitate comparison.

DISCUSSION.

It can be seen that the new method consumes much less manipulative time than either the U. S. P. X or the U. S. P. XI method. This is especially true in the case of the U. S. P. X method, where a double distillation was required in addition to the shakeout. The new method requires no more manipulative time than a straight distillation; it entails no shakeout, no addition of saturated sodium chloride solution, and no double distillation. All common volatile contaminants of the type which the official procedure removes by shaking with petroleum benzin are automatically kept from interfering by this method. Free iodine, ammonia, acetic acid, glycerin and other substances requiring special treatment must be kept from interfering by the use of preliminary measures as described in the U. S. P. XI (4). Acetone, which is commonly used with alcohol in pharmaceutical preparations, will interfere in the assay and should first be removed as directed by Hoff and Macoun (3).

As shown in the table, the U. S. P. XI method gives results as much as 5% low, and apparently there is no definite relation between low results and certain particular contaminants. When no contaminant is present the results are only slightly low if the usual petroleum benzin shakeout is carried out just as if an interfering substance were there. This indicates that the shakeout does not completely remove all interfering substances, while contributing to the low results, and therefore a method which does not employ a shakeout, has no losses due to other causes, and which efficiently removes the interfering substances should give correct results. The new method accomplishes this result and at the same time it decreases the amount of manipulation required in the assay.

Coöperative assays of known alcohols with various contaminants have been carried out by six laboratories comparing this new method with the U. S. P. XI method. In a majority of cases the new method gave more accurate results than the U. S. P. XI method. The maximum deviations in the results of the six laboratories for each of four samples tested were in each case less with the new method than with the U. S. P. XI method.

SUMMARY.

A new method of distilling the alcohol from a pharmaceutical liquid for alcohol determination has been described, which gives more accurate results than hereto-

fore obtainable in the presence of volatile substances other than alcohol and water. The new method is not only more accurate, but is much less time consuming than previous methods.

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ANALYSIS OF GLYCEROPHOSPHATES.* I. DISCUSSION OF ASSAY METHODS FOR FERRIC GLYCEROPHOSPHATE AND MANGANESE GLYCEROPHOSPHATE.

BY R. M. HITCHENS.[1]

A.—FERRIC GLYCEROPHOSPHATE.

Ferric glycerophosphate is customarily assayed by reducing the ferric ion with hydriodic acid, the iodine liberated being determined by titration with standard sodium thiosulfate (1). This reduction proceeds but slowly and is reversible. To force the reaction to completion it is necessary to keep the concentration of ferric ion and of hydriodic acid as high as possible. Thus a distinct excess of mineral acid such as hydrochloric acid is required to prevent the hydrolysis of ferric chloride to ferric basic chloride. However, the mineral acid concentration must not be too high since it tends to form complexes with the ferric ion. This excess of acid serves also to increase the concentration of hydriodic acid, the source of which is usually potassium iodide. Oxygen must be absent from the solution since it reacts slowly with hydriodic acid to form iodine, thus giving high results. The reaction is far from instantaneous, various authors recommending reaction periods of from 5–60 minutes. The reaction velocity increases with increasing temperature, temperatures of as high as 60° C. having been recommended.

With solutions of pure ferric salts the speed of reaction is not a problem, Oakley and Krantz (2) having found that the reaction is rapid. With phosphates present Kolthoff (3) obtained low results unless the concentration of mineral acid was sufficiently high. Glycerophosphates behave in a similar fashion, reducing the reaction velocity by forming complexes with the ferric ion.

The National Formulary V recognized this fact by prescribing in the assay procedure for ferric glycerophosphate a reaction period of 30 minutes at a temperature of 40° C. Since, however, it provided no means of removal of oxygen from the solution, this procedure gave results high by as much as two per cent.

In the newly published National Formulary VI this assay procedure has been improved by eliminating oxygen, by increasing the concentration of potassium iodide and of ferric glycerophosphate and by decreasing the concentration of hydrochloric acid. These changes all serve to promote a more rapid reaction with less error from air oxidation. However, even under these revised conditions the reaction is far from instantaneous and the minimum five-minute reaction period

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* Scientific Section, A. PH. A., Dallas meeting, 1936.

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recommended by N. F. VI is insufficient to allow complete reaction except at elevated temperatures.

The effect of time and of temperature upon the completion of reaction of ferric glycerophosphate and hydriodic acid under the conditions imposed by N. F. VI is illustrated in Table I. The results are expressed in percentage completion of reaction, taking as 100 per cent the constant value obtained with reaction times in excess of 20 minutes at 40° C. That this is a valid procedure was demonstrated by preparing a standard solution of ferric sulphate from pure electrolytic iron, adding glycerophosphoric acid to make a synthetic ferric glycerophosphate and analyzing by the N. F. VI procedure. It was found that reaction times of 15 minutes or more at temperatures of 40° C. and above gave quantitative recovery of the iron present.

TABLE I.—EFFECT OF TEMPERATURE AND TIME UPON THE COMPLETION OF REACTION OF FERRIC GLYCEROPHOSPHATE AND HYDRIODIC ACID, N. F. VI PROCEDURE.

Time, Minutes.	Extent of Reaction, Per Cent. Temperature ° C. 20	30	40
5	75.6	97.8	99.5
10	90.0	98.5	100.0
20	97.2	99.0	100.0

From Table I it may be seen that the reaction is incomplete in five minutes, even at 40° C. Complete reaction is not obtained even in 20 minutes at 30° C. It is evident that with an average laboratory temperature of 25° C. that the N. F. VI procedure, involving a minimum reaction time of 5 minutes, might lead to results 10 to 15 per cent low. That the reaction is incomplete in this time is indicated by the fact that the end-points are not permanent and that successive analyses are not reproducible.

In view of these findings it would seem desirable that the N. F. VI procedure for the assay of ferric glycerophosphate be modified slightly to include a minimum reaction time at a minimum temperature to insure completeness of reaction. The procedure suggested is:

"Dissolve about 1 Gm. of Ferric Glycerophosphate, dried to constant weight at 110° C. and accurately weighed, in 25 cc. of distilled water in a glass-stoppered flask. Add 3 cc. of hydrochloric acid, 1 Gm. of sodium bicarbonate in small portions, and 6 Gm. of potassium iodide; securely stopper the flask, and allow the mixture to stand 20 minutes at a temperature of 35–40° C. Cool to 20° C., add 50 cc. of distilled water, and titrate the liberated iodine with tenth-normal sodium thiosulphate, using starch T.S. as the indicator.

"Each cc. of tenth-normal sodium thiosulfate is equivalent to 0.0311 Gm. of $Fe_2(C_3H_5(OH)_2PO_4)$ and to 0.005584 Gm. of Fe."

TABLE II.—TYPICAL ANALYSES OF SEVERAL COMMERCIAL SAMPLES OF FERRIC GLYCEROPHOSPHATE, MODIFIED N. F. VI PROCEDURE.

Sample.	Trial 1, Per Cent Fe.	Trial 2, Per Cent Fe.
A	16.05	16.04
B	17.80	17.82
C	17.38	17.39
D	17.02	17.02

This procedure differs from the present official one only in the time and temperature of reaction. This slight change is sufficient to insure closely reproducible results as exemplified by the series of check analyses on several samples of commer-

cial ferric glycerophosphate given in Table II. It will be seen that the results agree within the limit of experimental error in volumetric analysis.

B.—MANGANESE GLYCEROPHOSPHATE.

Soluble manganese glycerophosphate N. F. V was assayed officially by solution in water, precipitation as manganous sulfide and ignition to manganous-manganic oxide. Manganese glycerophosphate N. F. VI is the insoluble variety of the salt. The N. F. VI method for its assay is the same as that of N. F. V for the soluble salt with the exception that the former is first dissolved in hydrochloric acid and the latter in water.

Because of the large excess of hydrochloric acid employed to dissolve the salt the new N. F. VI procedure is unworkable. N. F. VI specifies that 0.5 Gm. of the salt be dissolved in 95 cc. of water plus 5 cc. of hydrochloric acid, that to this solution 20 cc. of ammonia T.S. and 10 cc. of ammonium sulfide T.S. be added to precipitate pink colloidal manganous sulfide and that the solution be boiled until the sulfide is transformed to the green, readily filterable form. This transformation does not occur. Instead, as boiling proceeds, hydrogen sulfide is volatilized until the pink colloidal manganous sulfide redissolves. The large amount of hydrochloric acid used to dissolve the sample, when neutralized with the ammonia T.S., forms an ammonium chloride-ammonium hydroxide buffer of which the p_H value is too low to allow the transformation of pink to green manganous sulfide. To make the N. F. VI procedure workable it is merely necessary to use a much smaller quantity of hydrochloric acid. If the N. F. VI procedure be changed to read as follows this trouble is avoided:

> "Wet about 0.5 Gm. of manganese glycerophosphate, dried to constant weight at 110° C. and accurately weighed, with about 5 cc. of distilled water, add hydrochloric acid drop by drop from a micro pipette until solution is complete (not over 0.5 cc.), add 95 cc. of distilled water; add 20 cc. ammonia T.S. and 10 cc. of ammonium sulfide T.S., and heat a few minutes until the precipitate has become green. Allow" etc., as in N. F. VI.

Using this procedure the transformation to green manganous sulfide occurs before the solution even reaches the boiling point and the analysis may be completed.

Even with the inclusion of this step the N. F. VI method is none too satisfactory on account of the variability of the composition of the ignition product, manganous-manganic oxide. The composition of this material is dependent upon the temperature of ignition and upon the degree of access of air during the ignition (4). Even with precise control of all conditions Raikow and Tischkow (5) were not able to reproduce the weight of the precipitate within 0.5 per cent. It has been the writer's experience that two analyses run simultaneously will give results in close agreement with each other but may or may not check the results of two similar analyses run at a different time or by a different analyst, the differences often exceeding two per cent. Since the N. F. VI assay minimum is 98 per cent the error in the analysis may be larger than the impurity limit allowed. It would seem that a better method should be sought.

In the presence of organic matter the determination of manganese is limited to gravimetric methods unless preliminary separation as the sulfide is utilized. In addition to the sulfide method manganese may be determined gravimetrically by

precipitation as manganous ammonium phosphate followed by ignition to pyrophosphate or by weighing as sulfate at 450–500° C. after preliminary separation as sulfide. Other methods are of minor importance. The pyrophosphate method appears the most practical one for manganese glycerophosphate.

In order to determine the applicability of this method a stock solution of manganous sulfate was prepared. Exactly 25.00-cc. aliquots of this solution were evaporated to dryness and ignited to $MnSO_4$ at 450–500° C. in order to determine the concentration of manganese in the solution. The same size aliquots were then subjected to analysis by the sulfide and by the pyrophosphate method both with and without the addition of glycerophosphoric acid. The results obtained in these analyses are shown in Table III. The results are reported as grams of manganese per 25.00 cc. of solution.

TABLE III.—ANALYSES OF A STOCK SOLUTION OF MANGANOUS SULFATE FOR MANGANESE.

Glycerophosphoric Acid.	Gm. Manganese per 25.00 cc. $MnSO_4$ Method.	$Mn_2P_2O_7$ Method.	Mn_3O_4 Method.
Absent	0.1521	0.1525	0.1573
Absent	0.1534	0.1533	0.1582
Absent	0.1528	0.1522	0.1522
Absent	0.1525	0.1530	0.1521
Average	0.1527	0.1528	0.1549
Present		0.1525	0.1522
Present		0.1521	0.1517
Present		0.1528	0.1562
Present		0.1524	0.1567
Average		0.1525	0.1542

It is apparent that the sulfate and pyrophosphate methods furnish results in good agreement and that the results by the latter method are the same whether or not glycerophosphate is present. It is evident, too, that some of the analyses by the sulfide method are in good agreement with the others but some are not. These data are representative of the type encountered with this method and show the variability in the composition of manganous-manganic oxide. The results by the pyrophosphate method are encouraging for its use as an official method of assay of manganese glycerophosphate.

The precipitation of manganese ammonium phosphate must be carried out under carefully controlled conditions. When a hot acid solution of a manganese salt containing considerable phosphate and ammonium salts is neutralized dropwise with ammonia a flocculent precipitate of manganous phosphate first forms. This slowly changes into granular manganese ammonium phosphate. With glycerophosphates present this change is not always complete so that results with one precipitation are often low. This necessitates a double precipitation. Results with two precipitations are always good. The data in Table III were obtained in this manner. The exact procedure employed was as follows:

Wet with 5 cc. of distilled water about 0.5 Gm. magnanese glycerophosphate dried at 110° C. and accurately weighed. Dissolve with 2 cc. of hydrochloric acid. Dilute with 120 cc. distilled water, add 15 cc. ammonium secondary phosphate T.S. and 10 Gm. ammonium chloride. Heat to boiling. Add a few drops of methyl red T.S. Keeping the solution boiling throughout and

stirring constantly add ammonia T.S. drop by drop from a burette. As soon as precipitation commences adjust the rate of addition to about one drop per 5 seconds. Continue to add ammonia at this rate until the solution is neutral to methyl red, then add 2 cc. excess. Keep hot for thirty minutes, cool in ice and decant the clear mother liquor through a Gooch crucible previously ignited and weighed. Without washing the precipitate in the beaker redissolve it with 2 cc. of hydrochloric acid, add 125 cc. distilled water, 10 Gm. of ammonium chloride and 15 cc. of ammonium secondary phosphate T.S. Again heat to boiling, add methyl red T.S. and precipitate as before, adding ammonia T.S. to the boiling solution at the rate of one drop per 5 seconds until neutral and then 2 cc. excess. Let stand hot two hours, chill in ice and filter through the same Gooch as before. Wash thoroughly with water containing 1 cc. ammonia T.S. per 100 cc., dry in the oven a few minutes then ignite to constant weight at a bright red heat to $Mn_2P_2O_7$.

Each Gm. of $Mn_2P_2O_7$ is equivalent to 1.5849 Gm. of $MnC_3H_5(OH)_2PO_4$ or to 0.38695 Gm. of Mn.

Although the mechanics of precipitation are more exacting than in the sulfide method the increase in accuracy of the results is distinct. To illustrate the comparative results obtained by the two methods Table IV shows the results of several analyses by the two procedures on two samples of commercial manganese glycerophosphate. The results are expressed as per cent manganese.

TABLE IV.—MANGANESE CONTENT OF MANGANESE GLYCEROPHOSPHATE BY THE SULFIDE AND PYROPHOSPHATE METHODS.

	% Manganese.			% Manganese.	
Sample.	$Mn_2P_2O_7$ Method.	Mn_3O_4 Method.	Sample.	$Mn_2P_2O_7$ Method.	Mn_3O_4 Method.
A	23.8	24.4	B	25.1	25.2
	23.7	24.1		25.2	25.4
	23.7	24.1		25.1	25.7
	23.8	24.7		25.2	26.0

It is evident that the sulfide method gives values generally too high and varying over several tenths of a per cent while the results by the pyrophosphate method are readily reproducible to 0.1%.

CONCLUSION.

The assay method of the National Formulary VI for ferric glycerophosphate has been shown to give low results on account of the short reaction time allowed and the failure to specify a minimum temperature. A reaction period of 20 minutes at 35–40° C. prevents this difficulty.

The assay method of the National Formulary VI for manganese glycerophosphate is unworkable on account of the large excess of hydrochloric acid used to dissolve the sample. This difficulty is remedied by using 0.5 cc. instead of 5.0 cc. of hydrochloric acid. Even with this modification the method fails to give reliable results because of the variability of composition of manganous-manganic oxide. It has been shown that a double precipitation of manganese ammonium phosphate followed by ignition to manganese pyrophosphate gives much more reliable results.

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ANALYSIS OF GLYCEROPHOSPHATES. II. DETERMINATION OF SMALL AMOUNTS OF ORTHOPHOSPHATES IN GLYCEROPHOSPHATES.*

BY R. M. HITCHENS AND M. S. MCCAULEY.[1]

Present methods for the detection of traces of phosphates in glycerophosphates consist in the observation of the time required for the first formation of a precipitate of yellow ammonium phosphomolybdate. Such methods are evidently qualitative limit tests and not quantitative. It has been the experience of this laboratory over a period of years that the time of formation of such a complex precipitate as ammonium phosphomolybdate is dependent upon so many factors, some of which are beyond precise reproduction, that it is unreliable even for a qualitative limit test.

The presence or absence of a particle of dust or an air bubble, the manner of addition of the reagent, the rate of agitation—such factors as these may determine whether or not precipitation occurs within a given time. It is impossible to reproduce such conditions precisely. Thus it is not surprising that, as we have found, certain samples of glycerophosphates containing several tenths of a per cent orthophosphate pass the official N. F. VI limit tests while other samples containing but a few hundredths per cent fail to pass. Such a condition naturally leads to confusion in the trade. The need, therefore, for a sensitive quantitative routine method is apparent.

The literature concerning this analysis is fragmentary. One method proposed is that given in the "British Pharmaceutical Codex," 1934, page 982. It involves precipitation of the glycerophosphate together with the phosphate as the calcium salts from a hot solution neutral to thymol blue. The phosphate, present at this p_H value as the secondary salt, is converted into insoluble tricalcium phosphate and probably calcium primary phosphate. The latter may be determined alkalimetrically. This method, although simple and rapid, is hardly more accurate than 0.05 per cent (as P_2O_5) at its best.

On account of the small amounts of orthophosphates usually present in glycerophosphates it seemed best in developing a method of analysis to attempt to utilize the ammonium phosphomolybdate method as a quantitative procedure. Orthophosphates are precipitated quantitatively as yellow ammonium phosphomolybdate, $(NH_4)_3PO_4.12MoO_3$ from a warm nitric acid solution containing molybdic acid and ammonium nitrate. The method is ideally suited for minute amounts of orthophosphates since the precipitate is of constant composition and contains but 1.64 per cent phosphorus.

Unfortunately, unless conditions are adjusted carefully, precipitation of the ammonium phosphomolybdate may be incomplete, the precipitate may be of incorrect composition or it may be contaminated with molybdic oxide. The correct concentration of nitric acid, ammonium nitrate, molybdic acid and the proper temperature are rather easily obtained when the solution contains little except the small amount of phosphate being determined. However, many substances, among them glycerophosphates, decidedly retard the formation of the

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precipitate. In order to obtain complete precipitation in the presence of such substances it is necessary to employ a huge excess of precipitating reagent. This is particularly dangerous when glycerophosphoric acid is present, since it is hydrolyzed slowly into glycerol and orthophosphoric acid in acid solution.

The establishment of a procedure for the quantitative determination of small amounts of orthophosphate in glycerophosphate therefore involves adjusting the conditions to obtain complete precipitation of ammonium phosphomolybdate while preventing hydrolysis of the glycerophosphoric acid. This requires use of the minimum temperature, minimum time of standing and minimum concentration of nitric acid.

In order to ascertain the optimum conditions for the precipitation, a sample of sodium glycerophosphate was freed from phosphates by repeated fractional crystallization. To portions of this sample small known quantities of potassium monophosphate were added. Such knowns were treated with ammonium molybdate reagent, the yellow precipitate being determined gravimetrically. The concentration of molybdic acid and ammonium nitrate were so adjusted that complete precipitation occurred with the minimum concentration of nitric acid, the minimum temperature and the minimum precipitation period. After numerous trials a definite procedure was adopted. The method is as follows:

Precipitating Reagent:

Solution A. 100 Gm. molybdic anhydride A. R.
120 cc. ammonium hydroxide, concentrated
300 cc. distilled water
Dissolve the molybdic anhydride by warming. Add 380 cc. distilled water. Cool.

Solution B. 300 cc. nitric acid, concentrated
20 Gm. ammonium nitrate, A. R.
900 cc. distilled water.

Add solution A to solution B with constant stirring. Allow to stand at least 24 hours. Filter through a fine quantitative paper immediately prior to use.

This reagent must be stored in a cool place. At higher temperatures molybdic acid is precipitated, rendering the reagent insensitive. In case such precipitation occurs the reagent should be discarded. Procedure: Place in a 150-cc. beaker sufficient sample, usually 1 to 5 Gm., accurately weighed, to give no more than 0.15 Gm. yellow precipitate. Add 10 cc. distilled water. In the case of sodium, calcium and manganese salts add nitric acid drop by drop until acid to methyl orange and solution is complete; in the case of the ferric salt effect solution by warming on the steam-bath with constant stirring. If solution is incomplete filter, keeping the volume below 20 cc. In a second beaker warm to 55° C. *on the steam-bath* 100 cc. of freshly filtered precipitating reagent. Pour this solution into the beaker containing the sample. Stir, let stand fifteen to twenty minutes, filter through a Gooch crucible dried at 120–130° C., transferring the precipitate by means of a rubber policeman. Wash thoroughly with a solution of 5 cc. of nitric acid per 100 cc. of water. Dry to constant weight at 120–130° C.

$$\text{Percentage orthophosphate as } P_2O_5 = \frac{\text{wt. yellow precipitate} \times 0.0376 \times 100}{\text{wt. sample}}$$

This procedure is simple, rapid and readily applicable to routine control. It involves no more apparatus or technique than required in a simple gravimetric sulfate determination.

The results obtained by applying this procedure to samples of various glycerophosphates are given in Table I. Two types of determinations were made. The first involved addition of known amounts of phosphate, as potassium monophosphate to the sample of sodium glycerophosphate entirely free from phosphate; the second, addition of such known amounts to the filtrate after preliminary removal of any phosphate present originally.

TABLE I.—RECOVERY OF KNOWN AMOUNTS OF PHOSPHATE ADDED TO VARIOUS GLYCEROPHOSPHATES.

Salt.	Phosphate Added.	Phosphate Added, Per Cent P_2O_5.	Phosphate Recovered, Per Cent P_2O_5.	Error, Per Cent P_2O_5.
Sodium	Directly	0.056	0.058	+0.002
"	"	0.056	0.057	+0.001
"	To filtrate after pre-	0.010	0.009	−0.001
"	liminary separation	0.025	0.028	+0.003
"	of phosphate origi-	0.025	0.028	+0.003
Calcium	nally present	0.056	0.058	+0.002
"	"	0.056	0.061	+0.005
"	"	0.056	0.062	+0.006
Manganese	"	0.141	0.143	+0.002
"	"	0.141	0.145	+0.004
Iron	"	0.282	0.283	+0.001
"	"	0.113	0.114	+0.001

It is apparent that the method gives quantitative recovery with each of the four salts used, the errors ranging from 0.001–0.006 per cent as P_2O_5.

Establishment of the absence of hydrolysis of glycerophosphoric acid to glycerol and phosphoric acid under the conditions of precipitation was accomplished by reheating to 55° C. the filtrates from each of the above determinations and observing them for an additional 15 minutes. No further precipitation of ammonium phosphomolybdate was noticed in any case. On longer standing or at higher temperatures further precipitation occurred. The addition of as little as 0.0005 per cent phosphate as P_2O_5 resulted in immediate precipitation. This indicates that the amount of hydrolysis is too small to be considered.

In order to establish the reproducibility of the method a series of analyses was performed on various commercial samples of the different glycerophosphates. The results are given in Table II.

TABLE II.—DUPLICATE ANALYSES OF VARIOUS GLYCEROPHOSPHATES FOR SMALL AMOUNTS OF PHOSPHATE.

Salt.	Per Cent Phosphate as P_2O_5. Trial 1.	Trial 2.	Variation, Per Cent P_2O_5.
Sodium	0.004	0.003	0.001
"	0.017	0.017	0.000
"	0.095	0.095	0.000
Calcium	0.015	0.018	0.003
"	0.018	0.020	0.002
"	0.024	0.027	0.003
Manganese	0.026	0.028	0.002
"	0.203	0.209	0.006
Iron	0.336	0.338	0.002
"	0.162	0.159	0.003
"	0.094	0.093	0.001

It will be observed that the results are uniformly consistent, indicating that the method yields readily reproducible results.

CONCLUSION.

A rapid, simple precise method for the quantitative determination of orthophosphates in glycerophosphates, based upon their precipitation as ammonium phosphomolybdate, is described. It is accurate to ±0.003 per cent phosphate as P_2O_5. This is a distinct improvement over the customary tests depending upon the time of formation of ammonium phosphomolybdate which have been found to give erratic results.

BARBITURATE VEHICLES.*

BY BERNARD FANTUS AND H. A. DYNIEWICZ.

Owing to the fact that barbiturates are relatively recent additions to our Materia Medica, many who are now practicing did not learn much about them in their Medical and Pharmaceutical College courses. This might serve as an excuse for the finding in literature of such prescriptions as the following:

Prescription No. 1.

℞

Soluble Barbital	5.0 Gm.
Soluble Phenobarbital	1.0 Gm.
Elixir Lactated Pepsin, to make	60.0 cc.

When this prescription is compounded, several things happen: first, a color change to a muddy lavender and then a turbidity which on standing develops into quite a sediment.

SOLUBLE BARBITURATE ADMINISTRATION.

Perhaps a reason for the difficulty lies in the official title "Soluble Barbital," because it does not indicate that the sodium salt is soluble in water and only slightly soluble in alcohol, so that even a small percentage of alcohol will produce a pharmaceutic incompatibility because the "soluble barbital" is precipitated by alcohol.

Soluble barbital (barbital sodium) needs an aqueous vehicle. If, therefore, soluble barbital be prescribed in elixir, the prescription should call for "iso-elixir," as then the use of the Low Alcoholic Elixir (N. F. VI) takes care of the situation. In point of fact, no elixir or syrup is as good a disguising agent for soluble barbital as is glycerin which, in our opinion, yields a remarkably palatable preparation, as, *e. g.*, the following:

Prescription No. 2.

℞		
	Soluble Barbital	1.5 Gm.
	Distilled Water	8.0 cc.
	Soluble Saccharin	0.05 Gm.
	Glycerin, to make	25.0 cc.

This preparation carries the average official dose of 0.30 Gm. of soluble barbital per 5-cc. teaspoonful.

Prescription No. 3.

℞

Soluble Phenobarbital	0.15 Gm.
Distilled Water	2.0 cc.
Soluble Saccharin	0.05 Gm.
Glycerin, to make	25.0 cc.

A 5-cc. teaspoonful carries 0.03 Gm. of soluble phenobarbital, which is the average official dose.

A mixture of the two soluble barbiturates, if desired, as in Prescription No. 1, can of course be nicely accommodated in the recommended vehicle.

The Aromatic Syrup of Eriodictyon, which is an excellent vehicle for certain bitter substances, namely, alkaloids, is quite worthless for barbiturates: for the

* From the Laboratory of Pharmacology and Therapeutics of the University of Illinois, College of Medicine, and assisted by a grant from the AMERICAN PHARMACEUTICAL ASSOCIATION.

bitter taste of the barbiturate is due to an acidic substance which cannot combine with the acidic resin of eriodictyon.

The Syrup of Cherry and Syrup of Raspberry are also unsuitable as vehicles for the soluble barbiturates because of the alkaline reaction (p_H 9.3 of 6% solution) of the latter. These fruit syrups are delicate indicators of alkalinity, their color being changed by it as definitely as is that of litmus.

BARBITURATE ADMINISTRATION.

Of course, when a barbiturate such as barbital or phenobarbital is prescribed, the alcohol-soluble and water-insoluble substance is called for and the proper vehicle for it is an alcoholic fluid.

The official Elixir of Barbital contains between 29–32% of alcohol and carries only 0.14 Gm. of barbital per teaspoonful. The official Elixir of Phenobarbital contains between 17–20% alcohol and carries only 0.016 Gm. of phenobarbital per teaspoonful. The dosage in these official barbiturate Elixirs is definitely too small for marked hypnotic effect. While the average dose of phenobarbital as stated in the U. S. P. is 0.03 Gm., it is a fact that often 0.10 Gm. and even 0.30 Gm. is required. The patient may, of course, be given as many teaspoonfuls of the official Elixir as would be needed for the total dose required. This is, to say the least, uneconomic for a patient who might have to take seven teaspoonfuls of Elixir when one teaspoonful of the Iso-Elixir will carry the dose, as, *e. g.*, in the following:

Prescription No. 4.

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Phenobarbital	1.0 Gm.
Iso-Elixir, to make	50.0 cc.

M. and label: one 5-cc. teaspoonful in a little water at bedtime.

A pharmacist who receives such prescription should dissolve the active ingredient in the High-Alcoholic Elixir (N. F. VI): for it takes rather strong alcohol to carry this dose of phenobarbital.

It will be found that phenobarbital is much less unpleasant to the taste when it is given in rather strongly alcoholic vehicle and without much dilution. The more this solution is diluted, the more bitter it becomes. This is obviously the case, because of the general principle that *a substance will not exchange a good solvent for a poor solvent.* The truth of this proposition is also illustrated by the fact that an aqueous solution of soluble barbital has a more offensive bitter taste than an alcoholic solution of the same amount of barbital or of phenobarbital.

SUMMARY.

While barbital as well as phenobarbital is best given in solid dosage form (capsule or tablet), should administration in liquid dosage form be desired, glycerin is the best vehicle. It has a better disguising effect upon soluble barbiturates than alcohol has upon the insoluble barbiturates, with the difference that the glycerin solution will tolerate indefinite dilution. Hence, especially when the barbiturate is intended for a child, soluble barbital in glycerin solution, as suggested in Prescriptions No. 2 and No. 3, may be recommended.

FLUIDEXTRACT OF CELERY FRUIT, N. F. VI.*

BY P. L. BURRIN AND F. E. BIBBINS.[1]

In making tests on various lots of celery seed, samples of fluidextracts were made according to the National Formulary, Sixth Revision. In carrying out these experimental operations by process A, it was found that there is produced a very gelatinous residue which is supposed to be dissolved in the first percolate in order to make the fluidextract. It was noted further that this residue is not completely soluble. This fact brought to mind the possibility of a variation in the process in order to eliminate any gelatinization.

Fluidextract of Celery Fruit has always been official in the National Formulary. The first edition of 1888 gave instructions for manufacturing this product by the customary method of percolation, using a hydro-alcoholic menstruum, which is now known as process A. The required menstruum consisted of 2 parts of alcohol, and 1 part of water. The method of fractional percolation, which is now known as process C, was also given as an optional procedure.

This formula was retained until the publication of the N. F. IV in 1916. In this volume percolation by process A was retained, but the menstruum was changed to 95 per cent alcohol. This edition also gave the option of using fractional percolation.

There was no change in the method of preparing Fluidextract of Celery Fruit in the Fifth Revision of the National Formulary.

The Sixth Revision of the National Formulary, published in 1936, changed the menstruum from 95 per cent alcohol to one consisting of 9 parts of alcohol and 1 part of water. In all editions, process A was the one indicated; fractional percolation being allowed as an alternative process.

The results of a number of experiments using these various percentages of alcohol showed quite a difference in the end-product. Several lots of fluidextract were percolated with 95 per cent alcohol using process A. In each experiment only a slight residue was obtained when the weak percolate was reduced to a soft extract in order to combine it with the reserved portion. Different lots of seed were used, for these experiments, in order to eliminate any variation in crude material. If the fluidextract is manufactured using pure alcohol as a menstruum no gelatinous residue or precipitation occurs.

Using pure alcohol as a menstruum, several fluidextracts were percolated using process C, or fractional percolation, and in all cases, there was no trouble with sediment or gelatinous precipitate. The usual aging before filtration is highly desirable in all cases no matter which method of preparation is used.

Another group of fluidextracts was prepared according to process A, using a menstruum consisting of 9 parts alcohol and 1 part water. All of these experiments resulted in the same difficulty, namely: when reducing the weak percolate, we always obtained a gelatinous mass which is never entirely soluble in the reserved percolate. A satisfactory fluidextract can be made using a menstruum consisting of 9 parts alcohol and 1 part water only when the product is prepared according to process C.

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* Section on Practical Pharmacy and Dispensing, A. PH. A., Dallas meeting, 1936.

[1] From the Control Laboratories, Eli Lilly and Company.

The large number of experiments may be illustrated by four which will serve as examples, and for clarity the results may be tabulated as follows:

Experiment.	Drug.	Menstruum.	Process Percolation.	Alcohol, Per Cent.	Appearance.	Sediment.
1	A	Alcohol, 95%	A	82.0	Clear	Sl. Gran.
2	A	9 alcohol, 1 water	A	67.14, gelatinized when reduced	Brilliant	None
3	B	9 alcohol, 1 water	A	80.58, gelatinized when reduced	Clear	None
4	C	9 alcohol, 1 water	C	76.5	Clear	None

The authors are indebted to Mr. Glenn Williams and Mr. David McKay for valuable assistance in preparing a great number of batches of Fluidextract of Celery Fruit. Mr. John Taggart also rendered valuable service in determining the alcoholic content of the various products.

CONCLUSIONS.

If Fluidextract of Celery Fruit is to be prepared from a menstruum consisting of 95 per cent alcohol, it is not necessary to restrict the method of percolation as either process A or process C is satisfactory. In case it is desired to manufacture Fluidextract of Celery Fruit using a menstruum consisting of 9 parts alcohol and 1 part water as indicated in the N. F. VI, the two types of percolation should not be optional as process C gives a much more elegant pharmaceutical product than process A.

NOTES ON COMPRESSING GLAND PRODUCTS INTO TABLETS.*

BY F. D. STOLL[1] AND C. O. LEE.[2]

Last spring we were asked how to compress gland products into tablets. Not having given thought to the problem we set about to study it experimentally. We are, at this time, reporting formulas and procedures for making the following three glandular products into compressed tablets, desiccated heart substance, desiccated liver and desiccated pancreas.

COMPRESSED TABLETS OF DESICCATED HEART SUBSTANCE.

Formula.

Desiccated heart substance	85
Boric acid	6
White dextrin	4
Starch	2
Talcum	3
Simple elixir	
Alcohol	

* Section on Practical Pharmacy and Dispensing, A. PH. A., Dallas meeting, 1936.

[1] Assistant Professor of Pharmacy, Louisville College of Pharmacy. Graduate Student, Purdue University, Summer Session, 1936.

[2] Professor of Pharmacy, Purdue University School of Pharmacy.

Procedure.—The heart substance and the boric acid were intimately mixed and moistened for granulation with a solution of simple elixir, one volume and alcohol two volumes. The whole mass was granulated by being pressed through a 20-mesh sieve. The granules were then spread out and allowed to dry at room temperature. Drying took place slowly but uniformly. There was virtually no fine ungranulated material in the dried lot. About 15% of the dried granules were then pulverized by light trituration. To this about 5% of a mixture of talc, three parts and starch, two parts were added. This powder mixture was added to the granular mass. After being well mixed the whole was compressed into tablets.

The mixture just described compressed without difficulty and made tablets which were acceptable as to appearance, durability and disintegration.

Comments.—It should be said that this formula granulated almost ideally, it dried slowly and yielded no fine powder upon drying. It offered no trouble upon being compressed. The disintegration time was not fast but the tablets were always completely broken down in water within about thirty minutes.

Objections might be made to the presence of boric acid. Our excuse for using it is that it works well in this formula.

The use of simple elixir as a part of the moistening agent imparts a faint but pleasing aromatic odor to the rather unpleasant glandular substance.

COMPRESSED TABLETS OF DESICCATED LIVER SUBSTANCE.

	Formula 1.	Formula 2.
Desiccated liver substance	90	90
White dextrin	7	..
Boric acid	..	5
Potato starch	1.2	2
Talcum	1.8	3
Granulating liquid	Alcohol, 80%	Alcohol, 1 volume Simple elixir, 2 volumes

Two formulas are offered for this product because both compressed into very good looking tablets. One is made with boric acid, the other without it.

The general procedure in this case was about the same as for the heart substance and the details need not be repeated.

Formula 1 dried, after granulation, much more quickly than Formula 2, and had about 5% of fine powder while Formula 2 had 15%. Both formulas were easily compressed into three different sizes of tablets. Formula 2 required less compression than Formula 1 and had the advantage of the odor imparted by the simple elixir.

Formula.

Desiccated pancreas substance	50
Boric acid	10
Potato starch	5
Talcum	10
Sodium chloride	20
Lubricant	5
Potato starch 2	
Talcum 3	
Alcohol	

Procedure.—The first five ingredients were thoroughly mixed and massed for granulation by the addition of alcohol. The mass granulated rapidly and dried rather slowly but satisfactorily.

The tablets from these two formulas fulfilled the requirements of good compressed tablets as to appearance, durability, and solubility.

COMPRESSED TABLETS OF DESICCATED PANCREAS SUBSTANCE.

The formulas which were satisfactory for heart and liver substances would not do for pancreas substance. After a number of variations in formulas and modifications in technique, the following formula was devised. It makes very good looking tablets.

In several attempts to compress various formulas of desiccated pancreas it was observed that the mass soon became sticky and gummed the punches, due perhaps to the hygroscopic character of the dried pancreas. With the above formula this trouble was entirely obviated by drying the granules in an oven at 100° for about one hour. The dried granules were then mixed with the lubricating powder and compressed without delay.

The tablets which we made, as just described, were quite acceptable as to appearance, durability and solubility. Whether they will remain stable upon standing remains to be seen. Observations are being made upon them from time to time.

Comments.—In the first place this formula is but fifty per cent pancreas. Secondly, it contains ten per cent boric acid. Thirdly, the temperature required to dry this formula sufficiently for compression is too high for such products.

SUMMARY.

It has been observed that large amounts of the moistening agents were necessary to effect proper dampness for granulation.

We have been able to produce granulation without resorting to the bases or excipients suggested for tablets of glandular products. Those most often mentioned are lactate, phosphate, and glycerophosphate of calcium, and alkaline bases or salts.

NOTE: The formulas submitted are given for their technical interest.

A GREATER KNOWLEDGE OF PHARMACOLOGY IS ESSENTIAL TO THE PROFESSIONAL PHARMACIST.*

BY A. O. MICKELSEN.[1]

The advancement of modern medicine has had a definite effect on the importance of pharmacology to the medical student. The course, pharmacology, is undoubtedly a better one to-day than a decade ago, though other courses are receiving greater attention in the medical college. The medical student is naturally devoting his greatest interest and attention to subjects stressed in modern medicine.

Pharmacology is receiving more scientific research than ever before, and professional magazines are filled with interesting records of experiments. It is becoming a distinct and separate profession with a prerequisite training, not as a doctor nor a pharmacist, but as a pharmacologist. The demand for pharmacologists is increasing. The following quotation is from the United States Public

* Section on Practical Pharmacy and Dispensing, A. PH. A., Dallas meeting, 1936.

[1] Dean, School of Pharmacy, North Pacific College of Oregon, Portland, Oregon.

Health Service, Treasury Department, Civil Service Examination, Pharmacologist, $3800.00 a year.

Requirement.—"They must have completed a full four-year course in a college or university of recognized standing leading to the bachelor's degree with major courses in pharmacology or a closely related science."

A pharmaceutical education will meet this requirement.

Requirement.—"Except for the substitution provided below, they must have had at least five years of progressive, professional, paid experience in scientific investigative work in pharmacology, at least two years of which must have been in very important and comprehensive research in pharmacology.

"*Substitution of Additional Education for Experience.*—Each full year of graduate study successfully completed in a college or university of recognized standing, majoring in pharmacology, may be substituted for each year of the experience prescribed in research in pharmacology." With reference to the above substitution of education for experience, some of our Associated Colleges of Pharmacy offer advanced courses which would meet this requirement.

"*Non-Qualifying Experience.*—None of the following experience will be accepted alone as meeting the experience requirements: Graduation from a medical school and subsequent practice of medicine, even though it includes private experimentation with drugs; routine laboratory investigations; research in fields other than pharmacology, such as biochemistry, physiology, bacteriology, pathology, etc."

The real question is, "Who is going to occupy the position as the pharmacologist in the future?" In the past the physician has held this position. The pharmacist holds the logical position in the field of public health work as the pharmacologist. The pharmacist has the basic knowledge of the chemistry of drugs, their source, dose and action. This training is imperative for pharmacology work.

A greater knowledge of specific action of drugs and better methods for the administration of medicinal substances is the constant research work of the medical professions. Every prescription filled in a pharmacy is intended to have a definite physiological action. The professional pharmacist should be selling the action of drugs and not mere merchandise. The purposes of prescriptions are as numerous as the diseases which they are intended to relieve. To be in a position to give definite information regarding the desired drug, its action, use and contraindications is bound to bring professional business to the pharmacist. Physicians visit the prescription department to obtain accurate information regarding the drugs they wish to prescribe. The pharmacist having a good knowledge of pharmacology is in a position to build a desired professional relationship and inspire the confidence of the allied medical professions. A greater knowledge of pharmacology is the gateway to successful professional pharmacy. Such a knowledge is essential for a strictly prescription business.

We need only consider the advancement made in biological preparations in order to appreciate the value and confidence placed in medicinal preparations with a known specific action. Their action depends on proper storage and dosage. This specific action of biologicals has won the confidence of humanity and taken away the fear of many epidemic diseases. What is true of biologicals is applicable to other drugs. For example, an inert substance, such as mineral oil, when advertised and sold as merchandise without regard for its proper use, may cause serious bodily injury and at the same time detract from the professional rating of the pharmacist making the sale. If, however, the highest grade of oil is used and the physical prop-

erties considered in conjunction with its use, even mineral oil may serve a most useful purpose in medicine and help to inspire confidence in our profession. The U. S. P. recognizes a light and a heavy mineral oil, but this subdivision is insufficient for prescription purposes. Viscosity should be indicated on each prescription, depending on the purpose of the oil.

In contrast to mineral oil, I wish to mention a potent drug such as adrenalin chloride, which unquestionably revives many lives annually that otherwise would be lost. This potent drug has a physiological action in a dilution of one to one hundred thousand or it may be used in a dilution of one to one hundred, depending on the desired effect by the prescriber. Pharmacology applies to all useful drugs, whether inert as mineral oil, or potent as adrenalin chloride; a knowledge of their action creates professional rating.

In glancing at the eleventh edition of the U. S. P. we find a greater uniformity in the strength of drugs and higher standards for their purity. The National Formulary admits only those drugs which have proven to be useful, meaning their pharmacological action. The purpose back of all medication is to furnish prophylactic and curative agents to aid and restore to normal any physiological defect.

The pharmacological action of drugs should be considered before purchasing drugs intended for resale. The resale value of drugs should be dependent on their true therapeutic value. The drugs purchased on deceptive claim by their manufacturer may have a rapid turnover for a short time, but such preparations are soon discovered, doomed and finally remain on the shelves in the drug store as worthless stock. Our public health laboratories are constantly analyzing and revealing the true value of patented medicinal preparations, but they cannot handle the numerous violators; what is needed is the coöperative work of the pharmacists. Drugs of real value inspire confidence in the pharmacist and continue to have a resale value, so long as they are properly preserved. Numerous traditional treatments such as asafetida tied in a small bag suspended at the neck, for the prevention of contagious diseases, have completely lost their selling points, even in our most rural districts. The pharmacist who is not keeping up with modern therapy is in the asafetida class and undoubtedly losing professional standing, primarily due to the fact that he has discontinued studying since graduating from college. Our drug stores are cluttered with worthless drugs, drugs which were once considered useful. Many of the drugs deteriorate rapidly, not only void of physiological action but in some instances harmful should they be dispensed. These drugs must be discarded and the loss charged against useful drugs carried in stock. Drugs can have no value without a therapeutic action.

A knowledge of pharmacology is of value to the pharmacist from a medico-legal aspect. The law requires that the pharmacist must be familiar with the action and doses of potent drugs dispensed on prescriptions. He can be legally held with the physician in filling a prescription directing an overdose, even though the prescription was filled as written. The public regards the pharmacist as a person trained in pharmacology and capable of detecting any error pertaining to prescriptions. The physician is devoting more time to diagnosis and relying on the pharmacologist, or the detail man, in directing proper medication. Thus modern medical practice places a greater responsibility on the pharmacist.

Detailing Physicians for Prescriptions.—The success of a detail man depends

on his knowledge of pharmacology. It makes no difference if the detailing is for a pharmaceutical product or for an original prescription—the selling point is pharmacology. Physicians must have results from prescriptions in order to retain their patients and increase their practice. The ethical physician and dentist are interested in the specific action of reliable drugs, and are willing to listen to a pharmacist who knows pharmacology. I know of one instance where a physician was ill and unable to be at his office. He called his capable pharmacist to check over his charts and prescribe for his patients during his absence from the office. This pharmacist knew his pharmacology. The patients were not even aware of the physician's illness.

Considerable study has been devoted to a feasible method of classifying drug stores as professional or semiprofessional, using as a general basis stock and equipment. It is granted that adequate stock and equipment are necessary for classification, but a close survey of a strictly prescription pharmacy will reveal a personnel of pharmacists who are really pharmacologists. The establishment of more strictly prescription pharmacies must come through the efforts of our registered pharmacists, their determination to be professional and continue their studies of pharmacology after leaving college. The colleges of pharmacy can stress the importance of pharmacology. The curricula should contain an adequate course in both lecture and laboratory work in pharmacology. The college can only leave the graduate with a background of fundamental principles. His ultimate success as a professional pharmacist depends largely on his willingness to continue his study of accepted publications and books of professional rating.

SUMMARY.

The M.D. degree is not a requirement for a pharmacologist. The pharmacist is the logical man to grasp the opportunity by studying advanced pharmacology.

Pharmacology offers a new opportunity for prescription pharmacists and is essential to a successful prescription business.

The pharmacological action of drugs should be considered before making a purchase of medicinal preparations for resale.

Pharmacology enters into the medico-legal aspects of pharmacy.

Classification of drug stores, into professional and semiprofessional, is dependent on the training of the personnel as well as equipment and stock of drugs.

ARE CUSTOMERS PRICE CONSCIOUS?*

BY C. LEONARD O'CONNELL.[1]

It is commonly accepted as a clear matter of fact among most retailers that customers as a group are price conscious. In consequence of this, price appeal is being overemphasized in appealing to customers by many independent merchants who are ill-equipped both by training and experience to engage in the rough game of cut price merchandising.

The speaker desires to state baldly that he is not, has not been and probably

* Section on Commercial Interests, A. PH. A., Dallas meeting, 1936.

[1] Dean, Pittsburgh College of Pharmacy, University of Pittsburgh.

will not be convinced by the facts at hand that customers as a class are price conscious. Rather customers, as a class, are quality conscious, and price appeal, so-called, depends for its effective returns upon a foundational basis in the actual or imputed quality of the item exchanged.

So-called "price appeal" or "deep cut prices" are always used in conjunction with branded or well-known merchandise which has a fairly wide consumer acceptance ordinarily at well-known established prices. Custom then sets up in the mind of the purchaser and user a quantitative form or standard in reference to the quality and utility of the commodity in terms of exchange value or retail price. Over a period of time, such items earn for themselves a place in the minds of a consuming public as being fairly priced and of an acceptable quality. It is only when a public has its "mind set" on the customary value of an item that "deep cut price" or price appeal has any chance for a successful result. In other words, people buy well-known merchandise at deep cut prices not because of the low price essentially, but because of the price in relation to the quality the commodity actually has or the quality that they think the commodity has which amounts to the same thing.

Chain, department and aggressive merchandisers are well acquainted with this underlying principle. In fact, much of the success of modern merchandising is based upon the procedure of selling well-known merchandise at cost or less than cost in the hope that the public who gets merchandise of a known quality at greatly reduced prices may be influenced to feel that all merchandise, much of whose quality is unknown to the purchaser, is sold upon the same basis.

That the procedure of the merchandiser works is amply demonstrated by results. Using the system of marking down well-known merchandise and marking up less well-known or comparatively unknown merchandise, the dealer's success is measured in terms of the proportion of the marked-up merchandise that is sold in relation to the loss leaders. Unless the sales of own goods or profitable sundries, which sales are designed to grow out of the opportunities afforded to sell buyers of brand merchandise "something else" increase, the plan falls down of its own weight. In brief, this accounts for the poor success of the small retailer with a restricted market who resorts to "deep cut prices." His appeal for patronage is strictly limited by his relatively small market and the plan will not work. Unless he can draw potential or actual customers of other stores to him, deep cut prices, at the best, result in increased volume with little or no profit and, at the worst, in less volume at a great loss.

If one views his buying objectively, he will find that normally he elects commodities on the basis of their quality and utility and limits his purchases to the things he desires the most in relation to his budget. The public buys in this manner. Essentially, people buy from all the things offered, those which they desire most and while price is a factor, the determining character is the utility or quality of the commodity. Price alone never sold anything.

In an earlier time, people looked upon the retail pharmacist as a purveyor of quality merchandise and a quality man. The growth of the bazaar type drug store has put the dollar mark indelibly upon him in the minds of many people. When more retailers spend more time planning to sell quality goods at a fair price and less time in promoting the sale of loss leaders, then and then only will retailers

in pharmacy begin the long march toward recapturing the title of quality men in a world surfeited with cheap appeals based upon price.

EARLY PHARMACY IN NEW BRAUNFELS AND SAN ANTONIO, TEXAS.*

BY HENRY F. HEIN.

A history of early Pharmacy in New Braunfels and San Antonio brings us in direct contact with the early colonization and settlement of New Braunfels, Texas.

This period takes us to the later days of the Texas Republic and the early statehood days of our state.

It was in March 1845, when Prince K. Solms Von Braunfels returned from Germany with a large number of German immigrants, all of a high character and trained in various trades and occupations; they located on the banks of the Comal and near the Guadalupe River, and this settlement soon became an important town and trading center. Among those early pioneers we find Dr. Theodore Koester, the physician, and August Tolle, the pharmacist.

Transportation was slow; it was still the day of the ox team, the horse and wagon. The Cherokees and Commanches were still making raids. The candle and kerosene lamp were used in both the home and place of business. Among the drugs in common use were Simaruba, Chinin, Lavender, Chamomile, Sassafras, Calomel, Peppermint, Marjoram, Thyme, Spices, Bay Leaves, etc. Among the early prescriptions we invariably find the pill and powder were popular, and decoctions and infusions prescribed daily. An early partnership in the drug business started in March 1868, when Julius Voelker and C. Flaege signed an agreement written in German, and stipulated the terms, part of which were that each was to put up $1500.00 in gold; the firm continued for many years, and the firm to-day is still operating under the firm name of B. E. Voelker & Son, with a grandson, Edwin R. Voelker, in charge at this time.

During the period of the Civil War we find prices abnormal, due to the depreciated Confederate currency. Laudanum sold for as high as $20.00 an ounce and Chinin (Quinine) up to $400.00 an ounce.

Another man who engaged in the drug business shortly after the War was A. Forcke, and in looking over the old files we find that he bought his drug needs from Wheeler, Finlay & Company of New Orleans. The popular, in fact, the only routing, and that usually took a month for the average shipment, came over Indianola, at that time the leading coast city and chief port for southwest Texas.

Invoices for merchandise invariably started with a charge for box, container or shipping case, and the price charged was about $1.75. Invoices examined show such items as 20 gallons of coal oil, 40 pounds of corn starch, silver nitrate, with a price of $1.40 an ounce with an extra charge of 30 cents for container (bottle). Acetate and sulphate of morphine became popular items in the prescription room and were costing $11.00 an ounce, cheaper than to-day. There were frequent calls for piperine and also for infusion of calumba, laudanum and tincture of cinchona

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* Section on Historical Interests, A. PH. A., Dallas meeting, 1936.

compound. Cardamom seed was bought in five-pound lots and cost $4.00 a pound.

Beginning with 1870 we find invoices from Ad. Dreiss, of San Antonio (see further reference) selling at wholesale and making shipments of such patents as Wilhoff Antiperiodic at $10.00 per dozen; Ayers Ague Cure at $8.50; Jaynes Carminative Balsam at $2.60; Jaynes Expectorant at $7.50; Opodeldoc was priced at $1.50 per pound; Succus Liquiritiæ at $1.35; 2 ounces of Ammonium Bromide were billed at 30 cents an ounce, etc. On an invoice dated September 10, 1869, we noted 12 ounces of Quinine at $2.45 an ounce, and 10 pounds of Calomel at $1.40 per pound. Chloroform was priced at $1.70 a pound with a 20 cent charge for the bottle.

Other drugs in Mr. Forcke's invoices were such items as Buchu, Sassafras, Bergamot, Acetic and Sulphuric Ether, Glycerin (priced at 60 cents per pound), Kamala, Orange Peel, Ext. Mandrake. On an invoice dated April 21, 1870, we find Rhei-Magnes. Pancreatin, Citrate of Bismuth, Seidlitz Powders, Marsdens Balm, St. Johns Bread, Whortleberries, Agaric, Irish Moss and Rad. Granata. On an invoice dated July 8, 1870, a U. S. Dispensatory is priced at $8.50. On an invoice from McKesson & Robbins, New York, dated November 28, 1870, we find 1 keg (60 pounds) of Sage at 9 cents per pound, 48 pounds of Carbonate of Ammonium, 3 pounds of Opium at $12.50 a pound, also Cassia Cort, Pure Raspberry Juice, Alkanet and Anise Seed. A notation that invariably appeared at the foot of the invoice was "Insurance to Indianola;" on $138.00 the charge was $3.45. Prescriptions examined showed the following ingredients: Zinci Oxydate, Ferri Carbonas, Radix Senegæ; Massa Hydrag. seemed popular. The A. Forcke Drug Store was operated until his death in 1895. Some of the original fixtures, etc., may still be seen in the present drug store operated by H. V. Schumann, a former member of the Texas State Board of Pharmacy.

Many were the hardships these sturdy pioneers had to overcome in the early days when the whole empire was still a real wilderness, and in taking up the story, more particularly of San Antonio, we find a connecting link if we start with one of the early immigrants of New Braunfels who joined the colony in 1847. He was Albert Dreiss, a farmer, who later served as County Clerk, and one of his sons, Adolph, who served as a drug clerk, moved to San Antonio in 1857. The story of Adolph Dreiss would furnish enough material for a book, but we will limit it to a short sketch; it portrays early drug history in San Antonio and brings us up to a few years ago.

Adolph Dreiss (born at Stuttgart, Württemberg, Germany) in 1843, came to Texas with his parents, settling first at New Braunfels and later moving to San Antonio, in 1857, where he served as a clerk in the drug store of A. Netter, located on Crockett and Nacodoches Streets.

During the Civil War he served as a Hospital Steward in the Confederate Army, and later as an Indian Scout, after which he returned to San Antonio, going into the drug business on the corner of Commerce and Alamo Street, associated with Drs. T. C. Thompson and Theodore Olmstede, under the firm name of Dreiss, Thompson & Company (wholesale and retail). Later, in 1877, the store was moved a block north on Alamo Plaza. At this time we find James Clavin, Chasse & Cupples—F. Kalteyer & Son (wholesale and retail) also operating drug

stores on Commerce Street, at that time San Antonio's leading thoroughfare and business street.

The leading physician at this time in San Antonio was the beloved Dr. Ferdinand Herff, who practiced medicine for about 50 years in San Antonio.

In 1892 Adolph Dreiss sold his wholesale interest to F. Kalteyer & Son, when the two wholesale firms were merged and the San Antonio Drug Company was organized, with Geo. H. Kalteyer as president. His father, F. Kalteyer, died in 1884 and was a vice-president of the Texas Pharmaceutical Association at the time of his death. With Geo. H. Kalteyer at its head, the San Antonio Drug Company soon became the leading wholesale drug jobber in the Southwest. Geo. H. Kalteyer served as president of the Texas Pharmaceutical Association in 1891. The retail drug store was taken over from Kalteyer by Geo. J. F. Schmitt.

Adolph Dreiss continued his retail drug business on Alamo Plaza until his death, in 1908; the local newspapers paid him many compliments, referring to his sterling qualities as a patriotic, loyal and distinguished citizen. He was always found among the willing workers in the cause of bettering the conditions in San Antonio, which he had also served as Alderman-at-large. He operated an ethical pharmacy, as did his colleagues of those pioneer days; they were all gentlemen of the highest type. Hermann Dreiss (son of Adolph Dreiss) took over the drug store on Alamo Plaza and operated it until a few years ago, when he retired after disposing of the business to the Sommers Drug Co.

AN INTERESTING OLD MEDICINE CHEST.*

BY CHARLES WHITEBREAD.[1]

Such great sentimental value is placed upon the belongings of parents, grandparents, and more remote relatives, that personal relics are kept until the facts which enhance their value are forgotten. As a result of this sentimental clinging to old things much material loses all particulars pertaining to ownership before it is turned over to a museum. In many instances the fact that so little is known about a specimen is one of the principal reasons which prompts the donation of it. Of course, years of experience and work on similar specimens make it possible for the workers in museums to supply the approximate dates when some of these old things were used. The records of ownership when once lost are seldom resurrected.

The connection of relics with the persons by whom used and the places where they were used adds so much to their interest that efforts are made to procure as full information as possible to give them the required personal touch. It is so rare a thing for a specimen to retain the information which links it up with the persons who used it that it is a fact worth mentioning. A specimen of this type, well-preserved and well-authenticated, was recently added to the pharmacy collection of the United States National Museum. This relic is a medicine chest made by Paytherus, Savory & Company, Chemists and Druggists, 136 New Bond Street, London, England, in 1804. This medicine chest was the property of Ian Abraham

* Section on Historical Pharmacy, A. PH. A., Dallas meeting, 1936.

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Willink of Amsterdam, Holland, who married Cornelia A. Ludlow and lived at 18 Wall Street, New York City, and "Bloemen Heuvel," Flatbush, Long Island. The subsequent owners of the chest were Elizabeth Ludlow, Marie P. James, John P. Treadwell and William C. Baur. Mr. Baur, a well-known citizen of Norwalk, Connecticut, the last private owner of the chest, presented it to the Museum, and is to be credited with preserving the specimen and its history, as well as placing it where it will be kept for future generations, and thus serve the most useful purpose such an old relic can render. Mr. Baur is due much praise for parting with the chest before the facts which he knew concerning it were forgotten. In presenting the chest, Mr. Baur stated:

> I must tell you that it pulled a little at my heart strings to part with this chest for I can count more than a hundred years between my father and myself that were devoted to the sale of medicines.

The chest is of great interest to me. Since being placed on exhibition it has held the attention of members of the medical profession in general and pharmacists in particular. This is one of my reasons for offering pictures of the chest, one to show the interior and exterior, and the other to show the odd glass and metal medicine containers in use nearly one hundred and forty years ago. Particular attention is called to the sheet of paper bearing the skull and cross-bones. It is thought this paper was used to wrap poisonous medicines. It may have had other uses also. The iron for spreading plasters is the only one of its kind in the pharmacy collection of the United States National Museum. It illustrates a part of the art of pharmacy absorbed by the machines of the mass production era.

A booklet of fifty-five pages entitled "A Companion to the Medicine Chest," printed for and sold by James Tindal, 112 Great Portland Street, London, gives careful directions for the use of the various medicines and utensils contained in the chest. This little booklet lists the contents of the chest as follows:

Peruvian Bark	Paregoric Elixir	Soap Liniment
Epsom Salt	Tincture of Bark	Extract of Lead
Manna	Sal Volatile	Blistering Plaister
Magnesia	Spirit of Lavender	Basilicon
Rhubarb	Tincture of Gentian	Spermaceti Cerate
Jalap	Tincture of Rhubarb	Opening Pills
Cream of Tartar	Castor Oil	Astringent Powder
Calomel	Essence of Peppermint	Adhesive Plaister
Ipecacuanha	Æther	Court Plaister
Emetic Tartar	Elixir of Vitriol	Lint
Antimonial Powder	Tincture of Myrrh	Tape
Salt of Wormwood	Tincture of Benzoin	Glass mortar, scales
Laudanum	Spirit of Hartshorn	and other utensils.

Most of these medicines are in the chest, and everything indicates that many of them are part of the original stock of the chest. The *Genuine Black Drop* (Vinegar of Opium) and *James's Powder*, a celebrated proprietary medicine, are not included in the list of contents, and may have been added by one of the first owners of the chest. It is astonishing that so much medicine and so many utensils can be conveniently and neatly arranged and stored in the chest, the outside dimensions of which are $10^1/_2''$ x $10^1/_8''$ x $9''$. Quite a lengthy preface follows the List of Contents and Table of Weights and Measures. This gives general medical information.

The following advice concerning diseases, medicines and the prevailing method of determining doses is quoted:

It is impossible, however (in a publication necessarily so limited as this) to give direction sufficiently ample and particular for the employment of every medicine, still less for the management of every disease; much, undoubtedly, must be left to the sense and discretion of the reader; but the author has been exceedingly cautious not to urge or sanction the use of medicines beyond what necessity and safety dictated, whenever these guides could be kept in view. And so convinced is he of the intricacy of the art of medicine, and the duties attendant on its practice (even to those who have made it the study of their lives), that he earnestly advises every one not to trifle with health, and consequently with happiness, by assuming a medical capacity; but always to have recourse to professional assistance whenever it can be obtained.

The prescribed dose of each medicine (except where the contrary is expressed) is calculated for an adult or grown up person; but for children it must be diminished in the following proportions:

For a child seven years old, one-half
3 or 4 years old, one-fourth
one year old, one-sixth
one month old, one-tenth
or -twelfth.

Peculiarities of constitution and habit will often render necessary some deviation from the plan proposed; but these it is evident, could not have been detailed.

Fig. 1.—View of the old medicine chest with the lid raised and the lower compartments partly withdrawn.

The next thirty-five pages of the "Companion" are devoted to descriptions of the medicines contained in the chest. These descriptions are interesting but too lengthy for attention here. The three pages which follow the body of the little book give "Observations on Blood-Letting and Directions for Bleeding." The outline of this part of the art of the physician, then in its heyday, but since thrown into the discard, is interesting. It reads as follows:

The following observations are necessary to be attended to, since, however simple or unimportant the operation may appear, the life of a person sometimes depends on its being well timed, and properly performed.

Bleeding is proper after severe falls, where internal bruises are suspected; and where such injury has been inflicted, by any accident, as to threaten inflammation, etc.

In pleurisies and other inflammatory affections of the chest, known as stitches in the chest or side; cough and difficult breathing; and a full, hard pulse; from six to twelve ounces of blood may be taken away, and the operation be repeated in ten or twelve hours, if the blood has a sizy appearance, and the patient has been clearly benefited by the former bleeding.

It may also be employed at the beginning of inflammatory fevers; but here it is attended with hazard, and therefore requires the utmost caution.

Bleeding is often very serviceable in apoplectic and sometimes in epileptic fits; but the discrimination of such complaints is often difficult.

Persons between the age of twelve and forty are the most proper subjects for the lancet. The aged can ill bear this debilitating evacuation.

Direction: Pass the bandage round the arm, two inches above the elbow, moderately tight, so as to bring the superficial veins into view; of these choose that which is most prominent, provided no pulsation can be felt beneath, and if it does not roll under the finger.

Let the patient extend his arm, with the hand firmly clenched; then holding the lancet between the forefinger and the thumb of the right hand (while the thumb of the left keeps the vein steady), make a puncture through the skin and the upper side of the vein, in a somewhat

Fig. 2.—A picture of the removable contents of the medicine chest.

oblique direction, raising the lancet upward, so as to make the incision sufficiently large; the blood is then to be suffered to flow freely into a basin whose capacity has been previously ascertained. When a sufficient quantity has been drawn, the bandage is to be slackened, and the lips of the wound nicely brought together; a bit of linen rag, folded, is to be laid over them, and there secured by the bandage passed round the arm.

The right arm of the patient is most convenient to bleed, as the operator can then more easily use his right hand in making the puncture.

I have given one of the reasons for submitting this account of the old medicine chest as my belief that members of the medical profession in general and pharmacists in particular will be interested in the old relic. My second motive is a desire to help owners of similar chests—undoubtedly many reached the United States—to

identify them. The third reason is a hope that the description and pictures may be the means of prompting pharmacists to send the relics which they possess pertaining to their profession to one of the museums of this country developing pharmacy collections.

SOME PROBLEMS AND RESPONSIBILITIES OF OUR COLLEGES OF PHARMACY.*

BY ERNEST LITTLE.

INTRODUCTORY.

When our chairman asked me a short time ago for the title of the paper which I am to read to-day, I had had little opportunity to give the matter any thought, and consequently had no appropriate title in mind. I suggested the title which has just been read: "Some Problems and Responsibilities of Our Colleges of Pharmacy," because I felt it would, of necessity, cover, at least in a general way, anything which I might care to say to you. Now that the text has been announced, I ask that you please forget it as speedily as possible, in order that you may not later accuse me of wandering too far afield in my presentation.

PRACTICAL DRUG STORE EXPERIENCE.

The suggestion is again before us that one year of practical drug store experience in an approved pharmacy, following graduation, be required of pharmacy college graduates before they are eligible for the Board of Pharmacy practical pharmacy examinations. This seems an especially appropriate place to spend a few minutes discussing this question, inasmuch as it involves both education and legislation.

The suggestion of one year of practical drug store experience following graduation, as far as I can determine, was originally made by Dr. James H. Beal many years ago and has been commented upon by various individuals from time to time during the ensuing years. Dr. Beal's suggestion was made at a time when our colleges were devoting much less time to practical and dispensing pharmacy than is now the case, and when these courses were less well developed than they are at the present time.

The question has been discussed before various pharmaceutical groups, including the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, before a joint meeting of the American Association of Colleges of Pharmacy and National Association of Boards of Pharmacy at Toronto in 1932, and before various state pharmaceutical association meetings. So far as I know, it has never been given an affirmative vote when presented in a good clean-cut, uninvolved manner, although it has been withdrawn on more than one occasion when its defeat seemed imminent. In June 1933, the proposal was defeated at the annual meeting of the New Jersey Pharmaceutical Association. In March 1935, it was discussed at great length and overwhelmingly defeated at the annual joint meeting of the Boards of Pharmacy and Colleges of Pharmacy of District No. 2, which includes the states of New York, New Jersey, Pennsylvania, Maryland, Delaware,

* Section on Education and Legislation, A. PH. A., Dallas meeting, 1936.

District of Columbia, Virginia and West Virginia. A few weeks later it was enacted into law in the state of New Jersey and is now a provision of the pharmacy law of that state.

I believe there is but little dissenting opinion to the statement that one year of practical drug store experience for graduates of a four-year course is desirable and, if possible, in an approved pharmacy. The question which has again been revived is: "Shall the year's practical experience be required following graduation?"

Dr. Robert P. Fischelis, in speaking before the New Jersey Pharmaceutical Association in June 1925, made the following statement, which to me seems very sensibly put:

> "More and more the duty of training pharmacists has been shifted to the colleges and less and less 'experience' in the original interpretation of that word, is supplied in the drug store. First-class colleges now give *all* the training necessary for the equipment of a pharmacist excepting that of contact with customers and meeting the many and varied situations which arise in the daily work of the drug store. Some are attempting to supply that also. This latter training is of the greatest importance and it is really what our Boards of Pharmacy today have in mind when they require drug store experience as a qualification for registration. There was a time when 'experience' meant chiefly prescription experience. To-day it means all-around experience."

If Dr. Fischelis' opinion, based upon observations of the two-year course, was correct in 1925, it is more than doubly true to-day, with the four-year course now in full operation. The institution which I represent is to-day devoting about three times as much time, with greatly increased facilities and equipment of all kinds, to practical and dispensing pharmacy, as was the case when the two-year course was in operation. It would seem, therefore, that the question which we are discussing can be restated somewhat differently, as follows: "When can this general store experience, of which Dr. Fischelis speaks, be obtained to the best advantage? Following graduation, or earlier in the period of professional training?"

If Dr. Fischelis' contention is correct—that it is general store experience, rather than additional professional training, which is most desired from the year of practical experience—then the parallel between the medical interneship and our year of practical drug store experience is at once exploded. All of the physician's responsibilities are of a professional nature and his interneship is naturally professional in its entirety and should follow graduation from a medical college.

A large percentage of the retail pharmacist's responsibilities are of a non-professional nature and training for such activities can unquestionably be obtained to better advantage prior to graduation, when the individual will be more inclined to perform the somewhat menial tasks which constitute a part of an adequate and complete preparation for modern retail pharmacy.

Even when considered from a standpoint of additional *professional* training, I believe that the summer preceding the freshman year and the three summer months following each of the four college years, offer the best opportunity for practical experience. Although they should not be carried out simultaneously, I feel very confident, that the more completely the formal college work and practical drug store experience can be dove-tailed one into the other, the more effective each will become. Such an arrangement has worked out advantageously in engineering colleges; in fact, so much so that in some extreme cases the students are allowed to work for a number of weeks in industry, then study in the university for a similar

period of time, following which they again go back to their practical factory work. I am not advocating any such arrangement for pharmacy students, but I do contend that the proposed year of so-called interneship, following graduation, is a retrogressive step, and quite out of keeping with the best thought in modern education.

We have already seen it indicated in New Jersey that when students realize that drug store employment prior to graduation is not credited to them by the Board of Pharmacy, the tendency is to seek employment outside of the retail drug business, where greater compensation is available. The result is that each year we shall have an increasing number of students with no practical drug store experience, a fact which it seems to me is regrettable from many standpoints. Any requirement, which encourages them to delay such practical experience until their formal training is complete, is most unfortunate, to say the least. There is, after all, no definite line of cleavage between theory and practice. Each is dependent upon the other; each supplements the other. Any artificial separation of these two types of activities into widely separated periods of time is highly regrettable and not conducive to progress and improvement in the profession.

I am not arguing that practical drug store experience should be restricted to vacation periods between the four college years, or any other periods of time. I *am* pointing out that such vacation months provide an opportunity for practical experience far superior to that provided by the year following graduation and, for this reason, should not be decreed against by our state pharmacy laws.

I also fear that the regulation which is now in effect in New Jersey will encourage the illegal practice of pharmacy. When the employer learns that the four-year unregistered graduate is quite capable of compounding practically all of the prescriptions which he is called upon to compound, and to do so without direction or supervision, the tendency will be to allow him to *do* the things which he is obviously well prepared to do. The result is the illegal practice of pharmacy. Do we wish to place ourselves in a position where we are stimulating a disregard for our state pharmacy laws?

The statements which I have just made should in no way be *mis*interpreted as a reflection on the integrity of retail pharmacists. Such is not the case. The employer realizes that the object of state pharmacy laws is to protect and promote public health and public welfare. He realizes that when one of his employees adequately demonstrates that he is capable of rendering a certain professional service, he, the employer, is morally, if not legally, justified in permitting him to do so. He would be observing the spirit, if not the letter, of the law.

If the regulation now existing in New Jersey is adopted by other states, then the four-year college graduate should be given some legal official recognition which will enable him to legally perform the services which may very properly be required of him by his employer. Such recognition would, in spirit, amount to reëstablishing the assistant pharmacist, which many states have seen fit to abolish. Thus it is that an unwise regulation gives rise to other complications and involvements which never should have been permitted to arise.

We are all eager that the practical experience requirement should be made as effective as possible. Many believe that such practical experience should be regulated by Boards of Pharmacy through the medium of approved pharmacies. The more thoroughly it is supervised, the more effective it will become. Whether

or not drug stores can be classified into approved and unapproved stores for this purpose is another question. I am inclined to think that it might be done, but that it will take a great deal of courage, as well as wisdom, to do the job properly. No mere outlawing of certain chain stores or cut-rate shops can be thought of as the most adequate and effective measure, no matter how great the popular appeal of such action might be to all of us. I doubt if a satisfactory classification can be made on a basis of the number of prescriptions compounded per day. I can appreciate that a boy working under a conscientious preceptor in a store where only four or five prescriptions are compounded each day, may learn a great deal, if his employer is sincere in his determination to be of the greatest possible service to his apprentice. On the other hand, a store compounding as many as 100 prescriptions per day, may be so perfectly organized, at least from a business standpoint, that apprenticeship in such a store is next to valueless.

I am not contending that no such classification can be made. I *am* pointing out that it will be exceedingly difficult to do so and that constant and detailed supervision will be necessary if best results are to be obtained, even after such a classification has been completed.

I contend also that spiritual, as well as material, factors must be taken into consideration if a worth-while job is to be accomplished. The intent and purpose of the employer, and his attitude toward his employees are things of the spirit, still, they constitute the most vital factors involved in such a classification. The classification of drug stores into approved and unapproved stores, for purposes of practical experience, is a difficult and involved task and can be accomplished only by courageous, practical men of real vision. If the task is to be attempted at all, it should be *well* done.

The question which I have been discussing is a most important one. I hope we may have free discussion following my presentation. It is, to be sure, a responsibility of our Boards of Pharmacy, but I feel that I would be doing them an injustice, if I did not believe that they wish to have their decisions based upon the experience and advice of all who are genuinely interested in the welfare of pharmacy.

ABSTRACT OF DISCUSSION.

R. L. Swain stated that the general proposition was up in Maryland some time ago. He said that if he did not know that these minutes would be carefully edited he would not say some of the things he is going to say.

"The pharmacist desires the best qualified clerk he can get. He is interested in having the best return for his money when he employs a drug clerk or recent graduate. Every Board has submitted to it from time to time affidavit, from men who would be considered respectable, certifying that John Smith had such an amount of experience, when, as a matter of fact, later investigation would show he had not had a single day. In Maryland the Board has come to the conclusion that practical experience, as valuable as it is in theory, in practice needs some kind of supervision and control.

"It has been the experience of the examiner in Practical Pharmacy that the men who make the best grades in practical pharmacy laboratory work are referred to as having grown up in a drug store. The son of a pharmacist who spends practically all of his life in the pharmacy, then goes to high school and to college, will come before the Board examination with a background experience that reflects itself in the type of work he does in the practical pharmacy examination.

"In Maryland it was debated long and seriously as to whether there is a moral right to impose another year of training upon the prospective pharmacist; also, as Dr. Little said, in part,

somewhat to the discredit of the retail pharmacist, the conclusion has been reached that in the training of a pharmacist the College of Pharmacy may assume responsibility, compounding a prescription in a retail store, under the eye of an instructor or an associate professor. R. L. Swain continued: In Maryland, we are perfectly willing to permit the College to assume the responsibility of training or educating the pharmacist. There are phases which the College cannot do nor attempt to do. There should be practice in drug stores to acquaint the student with the physical appearance of a great many things that he will handle. Learning, by meeting of all actual practical conditions, there is then the question of when practical experience should be obtained. The four-year course is coming into favor and the Maryland Legislature arranged to pass an act permitting these students to get full credit on their one year of experience in the drug stores during vacation periods."

"The student must submit to the Board an affidavit, stating he was employed such and such a place, at such and such a time. There is a double check because the drug store proprietor must submit, under oath, the names of the registered employees.

"The Board has had in mind the purpose to avoid the imposition of an extra year after the student has received his degree."

Joseph H. Goodness thought that the paper by Dr. Little raises the issue of whether the applicant for examination shall be required to have a year of practical experience after his training at school, or whether he shall be allowed to get it during the school year. The New Jersey plan raised the period of training from four to five years. In his opinion it also decreased the number of students.

Dr. Little said he was eager to clarify his attitude. He thought that it had been stated specifically in the paper that he was opposed to the accreditment of this practical experience during the school year. He considered the duties and responsibilities of the student so heavy that it would be a mistake to allow credit for practical experience during the school year. He did not think it would have any effect on registration, but even if it did the educator should look beyond that. He thought the set-up described by Dr. Swain was just about the ideal set-up.

Mr. Goodness said that he did not mean during the same period that the student was attending classes.

Roy B. Cook thought the paper by Dr. Little a very sound and logical contribution upon a very important subject. He had also followed the remarks of Dr. Swain. He was of the opinion that during the period of academic instruction experience could not be credited. He was of the opinion that the experience gained during the vacation period has a profound influence on the student's life and his activities. He was in agreement with Dr. Swain relative to the young man who grows up in a drug store. The pharmacists thought that the most pathetic figure was the one who comes without drug store experience.

It would be very difficult to single out stores that would be approved for men to work in. After graduation they do so, because they have been forced upon the employers. Also they are expected practically to work for nothing.

Mr. Cook continued: "In connection with the mention of one or two schools that had some application of practical work, as it were, in academic instruction, at the present time we have working in the City of Charleston, from whence I hail, a system which has to do with the operation of the University of Cincinnati. We have a number of large chemical plants. They have a system of sending a boy to school in the University of Cincinnati for a certain number of months and then sending him to work in the chemical plants of Charleston for a period.

"Every once in a while some one checks up on the students from the General Electric Company or some other large corporation. It is interesting to note the students who come to our store from day to day, that eventually turn out to be not only well-trained men in their respective professions but almost all of them eventually get employment at or through the hands of some of the industrial companies of America."

Chairman O'Connell asked Secretary Christensen to indicate briefly what effect this would have on reciprocity.

He said in part: "The law requiring four years of college graduation contemplates one year of experience, and it does not make a particle of difference, so far as the law is concerned,

when that experience was had. As far as I know, the only state that requires by law that the experience must be after graduation is New Jersey. Under that law, if I understand it correctly, it would not make any difference how much experience a candidate had prior to entering college or during college, he would still be required to have this experience *after graduation*, which is designated by the rules of the board as pharmacy internship. 'So far as reciprocity is concerned, it does not make any difference when they had the experience.' "

Chairman O'Connell stated: "Let us say that an individual has been trained in some school in Pennsylvania, has satisfied the Pennsylvania requirement, was registered the same month he received his B.S., because he had experience gained in between; would New Jersey technically disallow him registration on account of that, say, three or four years later, because he was registered in a manner that would not have been so, if he had been in New Jersey?"

Secretary Christensen said: "I can only say I have not been able to get a clear understanding as to whether New Jersey will make that requirement apply to applicants from other states. It is difficult, sometimes, to get just what the Board requires on certain propositions, but the spirit of reciprocity really would entitle New Jersey or any other board to make any exceptions that they wanted. The general rule for reciprocity is that the candidate must have had the qualifications at the time he took the examination in the other state."

"When one state steps out and goes ahead or falls way behind the other states, that throws reciprocity out of balance. Our effort along the line has been to work toward uniformity."

Mr. Goodness inquired of Secretary Christensen "whether the question of uniformity in reciprocity is more important than attempting, either by conservative or radical means, to advance the level of the profession of pharmacy. That is, sometimes we quibble an awful lot about a new change because we want to maintain uniformity, which is, in itself, not very important."

Secretary Christensen said: "It is perfectly all right, so far as reciprocity is concerned, if somebody wants to try out some new proposition in his own state that he thinks is an advance, but it should only apply to that state. A man who has qualified in the other states, according to the general rules that have been followed, certainly should not be penalized in a state, because it is stepping ahead. We must make progress, and I can't help but feel that we have. In the last fifteen years we have gone from virtually no educational requirements to a four-year college course."

"Our general requirement as to grades is an average of 75, with not less than 60 in any one branch. Twenty years ago there was no semblance of uniformity in grades. Some boards registered on 60, on 65 and on 70. No attention was paid to minimum grades. That went on until three or four years ago, when the proposition was agitated that a man taking the practical examination, actual compounding of prescriptions, ought at least to make 75. I agreed that this was certainly a fair proposition, but then the advocate of that grade explained his proposition. It was that if he made above 75 on prescription work or practical work, that additional grade mark shouldn't apply on the general level. So that blocked the proposition of going to an average of 75 because the Association was not agreed on the proposition."

"Last year, the proposition was adopted that a candidate must make 75 in practical work. If one state wanted to leave off the extra on the average, it is all right to do so, but the agreement is not to insist on that from a candidate coming from another state. It is up to the individual state to do as it pleases, but we should follow some general proposition that would carry the whole fabric of standards, with reference to education, reciprocity and that whole proposition, to uniformity so in time the same general standards and uniform propositions will apply all over the country."

R. A. Lyman said: "This question of experience is one of the most important things that we have had before us for all time. There was a time when the experience training was a long period, and everything that the student learned in pharmacy he learned in the drug store. The educational system, as in other professions, has very largely replaced the apprenticeship system.

"We still have left remnants of the apprenticeship system. Personally, I do not see how to get away from it. The only point is, and Dr. Swain has repeatedly called our attention to the fact, that, while the student is getting experience, he must be educated. In other words, the purpose of the experience is education. I heartily believe in practical experience. I have given it some thought.

"A number of years ago I conceived the idea that we might, in our schools, give what we

called directed experience. The purpose of that directed experience was not to take the place of the experience that board members required, but to see if we could make the beginning student's time of more worth while in the drug store. In some ways it is quite satisfactory, and in other ways it is very discouraging. The most discouraging feature is to find druggists who will coöperate with us. Irrespective of what training a man has had in the college of pharmacy, if he has not had drug store experience, he is an expense to the proprietor for a long time.

"We conceived the idea that, if we could register the student while in the university, after he had at least three years of training—if we could register him for two or three hours of work a week, put it on a strictly scientific basis, as we would a laboratory course, and put a boy into a drug store and have him learn certain things in a logical order, from the proprietor, it would be a very fine thing to do, and then when graduated, he would know something about the drug store.

"That was done for the express purpose of teaching a boy something, and not that the training would take the place of any experience that the board of pharmacy might require under the law. Everything would be ideal if we could get men to coöperate and if we could pay them what their time is worth. It means that the retail druggist has to give time and thought to the problem just the same as the teacher has to give time and thought to any problem. You understand, the student registers for the practical experience in the university, pays for the course just as he does for any other course, but, of course, that pay does not come anywhere near compensating the druggist for the time he loafs.

"It seems to me the retail druggist has to engage in this thing as a labor of love. When it comes to practical experience, what the boy should be taught has to be graded just as in any other laboratory subject. That is why I am in favor, as things are now, if possible, of having this training begin in the freshman year or after the student is a freshman and after he is a sophomore and after he is a junior and maybe after he is a senior, three months in each place. I think, when it is divided up that way and spread out through the college course, it has a much finer educational value, because a boy who has no contact at all with the drug store has to learn from the bottom up, just as we do in all other lines of human activities. A boy can learn more if he is set to certain things in the freshman year than he can in the senior year. He is content to learn a lot of things, do a lot of menial things that are of educational value when he is a freshman, that he is not willing to do when he is a sophomore, junior or senior.

"If we will give it thought and then graduate the experience, the knowledge that this boy is to get, so there is some progression from his freshman year to the senior year, then I think we would have a very idealistic method of practical experience."

A PLAN FOR PHARMACY IN NEW ZEALAND.

The New Zealand plan contains the following provisions:

(1) A merger of existing wholesale druggists, having the objective of reducing the cost of drugs to the pharmacist.

(2) The licensing of wholesale druggists, manufacturing chemists and retail pharmacies.

(3) All existing pharmacies to be licensed; new licenses only to be issued after consideration of existing services, based on a quota of population, if fixed by the licensing authority.

(4) A Dominion Award, applicable to all vendors of medicines, both as regards rate of wages and proportion of adult to junior labor.

(5) Adoption of a standard dispensing price schedule and retail drug tariff, such schedule to be observed by all pharmacists throughout the Dominion.

(6) Automatic reservation to pharmacy of all drugs and preparations contained in the B. P. and the B. P. Codex, with a schedule of exceptions containing the list of household drugs and medicines which could be sold by other than chemists.

(7) The proclamation of "remote areas," in which, should a pharmacist go into business, the sale of all drugs and medicines should be reserved to such pharmacist.

(8) Recognition of all existing pharmacies, but in future no extension of company pharmacy. All new pharmacists to practice individually and in their own name.

(9) No person, association or corporation to conduct more than two pharmacies.

(10) Increased disciplinary powers, enabling the Pharmacy Board to enforce the provisions of the plan.

(11) A quota of apprentices, fixed each year in proportion to growth of population and the number of pharmacists going out of business.

(12) Further restrictions on unqualified persons handling compounded medicines.

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

ERNEST LITTLE—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

SUMMARY OF THE PROCEEDINGS OF THE 1936 MEETING.

The thirty-seventh annual meeting of the American Association of Colleges of Pharmacy was held at the Adolphus Hotel, Dallas, Texas, August 24 and 25, 1936. One hundred and sixteen representatives from 49 member-colleges were in attendance. Staff members from several non-member colleges in the United States and Canada were present at some of the sessions.

MEMORIALS.

Dean Bradley presented a memorial on the death of Professor E. H. LaPierre. Two additional teachers have passed away during the year, Marshall E. D. Close of Ohio Northern University and W. Bruce Philip of George Washington University. Tributes will be prepared for them also.

ADDRESS OF THE PRESIDENT.

President Wilson outlined standards of measurement for professional schools and discussed each standard as it related to pharmacy. The address appears in full in the September JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, pages 783–789.

REPORT OF THE SECRETARY-TREASURER.

Secretary Cooper reported a membership of 55 colleges with one in arrears for one year's dues. The balance in the treasury was $1249.14.

The report was accepted. The committee appointed to audit the accounts reported that they were correct.

REPORT OF EXECUTIVE COMMITTEE.

Chairman Jordan of the Executive Committee submitted the following summary for entering students in member-colleges:

Total number of entering students	2347
Total number of high school graduates	2330
Total number of special students	17
Total number with previous college training	669

There was an increase over 1934–1935 of 8 per cent, in part due to the addition of one member-college. Comparison with figures for last year showed slight gains in some, slight losses in others.

All member-colleges submitted reports of graduates during the year. A summary of that report indicates:

Number receiving degrees from three-year course (Ph.G. or Ph.C.)	74
Number receiving degrees from four-year course	1014
Advanced degrees awarded:	
Master of Science	11
Doctor of Philosophy with major in pharmaceutical subjects	15
Honorary degrees	15

(Master of Pharmacy, 4; Doctor of Pharmacy, 3; Master of Science, 3; Doctor of Science, 5.)

A study of beginning classes for five years seems to indicate an increase in the number of women entering pharmacy, there being 10 per cent last year in member-colleges in the United

States. The Committee recommended that a special committee be appointed to study the whole question of women in pharmacy and bring in a report at the next annual meeting.—*Adopted.*

The question of whether colleges of pharmacy are turning out more graduates than the profession can absorb has been studied and the Committee is inclined to believe that in general there are not too many, though it may be true in certain localities.

Attention was directed to the work of member-colleges in making professional contacts with medicine and dentistry in the various states. It is apparent that increased requirements for professional pharmacy have been influential in bringing about better coöperation with other health professions.

Attention was directed to the work accomplished by the A. PH. A. Committee of which Dean H. Evert Kendig was Chairman. Activity of this Committee helped the passage of Senate Bill 4390, giving opportunity for commissions for pharmacists in the Medical Corps of the United States Army.

A considerable number of matters were referred to the Executive Committee last year for study and report this year. Following are the recommendations and the action taken:

1. That paragraph 8, Section 6, Article VII of the By-Laws be changed to read: "Credits earned in a standard college, one recognized by the state educational department or by the state university in the state in which it is located, may be accepted for face value in a college of pharmacy in so far as such work applies on the course in pharmacy; but regardless of the amount of credit offered, no student shall be permitted to complete the course in pharmacy in less than three collegiate years in a college of pharmacy; this to become effective for students entering member-colleges on and after January 1, 1938."

2. That a committee of three be appointed to confer with the officers of the N. A. B. P. regarding time when the one year of practical experience now required can be secured to best advantage.

3. (With reference to a proposal to prepare mimeographed copies of addresses of former presidents.) The Committee was in agreement with the spirit of the recommendation and directed that in the future reprints of each presidential address be prepared and sent to each college.

4. That some suggestions dealing with relations with other health professions be referred to the Committee on Professional Relations.

Several matters were referred from the report of the Committee on Relation of Colleges and Boards. They were disposed of as follows:

5. Regarding pharmacists in the army was cared for by the passage of S. 4390.

6. (Standards to which drug stores should conform.) That this is a matter for joint conference with the N. A. B. P. and the Committee will be glad to confer with the N. A. B. P. on this matter if requested to do so by the N. A. B. P.

7. (Approval of efforts to restrict ownership of retail drug stores.) The Association was in accord with the spirit of the recommendation but felt that no legislative or administrative efforts along this line should be approved until the Association has had the opportunity of reviewing the bills or other measures designed to accomplish such results.

8. That the Association reaffirm its stand in behalf of Federal and state food drug legislation which will further protect the consuming public in the matter of foods, drugs and cosmetics.

9. (Minimum equipment for drug stores.) Believing this to be a matter for joint conference with the N. A. B. P., "the Committee will be glad to confer with this organization if requested to do so by the N. A. B. P."

10. (Opposing the addition of pharmaceutical jurisprudence as a subject demand of the boards of pharmacy.) Believing this to be "a matter for the consideration of the N. A. B. P. and not for the A. A. C. P. the Committee recommended that no action be taken."

11. That the colleges purchase as many copies of "The Professional Pharmacy" as they can use.

These recommendations were all adopted.

REPORT OF COMMITTEES.

Report of the Syllabus Committee.—Dean Beard presented a report for the Pharmaceutical Syllabus Committee and it was accepted.

Report of the Delegate to the American Council on Education.—Dr. Lyman presented a paper concerning the work of the Council and the program of the annual meeting.

The report was accepted.

Report of the Committee on Problems and Plans.—Dr. Lyman reported that the following studies have been assigned:

"A Detailed Study of the Extent of the Teaching of Pharmacology in the Colleges of Pharmacy in the United States," by Dr. James M. Dille.

"The Effect of the Four-Year Course on the Calibre of the Pharmacy Students Enrolling in the College of Pharmacy," by Dr. Henry M. Burlage.

"Foreign Educational Requirements for the Practice of Pharmacy," by Professor Ernst T. Stuhr.

"The Trends of Pharmacy," by Dr. L. Wait Rising.

"A Study of Sectional Pharmacy Laws," by Dr. E. V. Lynn.

At Dean Lyman's request, *Science News Letter* had consented to publish pharmaceutical material under the title of Pharmacy, and pharmaceutical workers were urged to report such information to that publication.

The importance of having the programs of Subsection N2 of the American Association for the Advancement of Pharmacy all that they should be was stressed.

Report of the Committee on Activities of Students and Alumni.—Dr. Ireland, Chairman of this Committee, made several recommendations, all of which were referred to the Committee on Resolutions.

Several standing committees had reports containing no recommendations: that of the Committee on Educational and Membership Standards, Dean DuMez, *Chairman;* Curriculum and Teaching Methods, Dr. Rising, *Chairman;* Committee on Libraries, Dr. Lee, *Chairman;* Committee on Relation of Boards and Colleges, Dean O'Connell, *Chairman;* Committee on Student Branches of the AMERICAN PHARMACEUTICAL ASSOCIATION, Dr. Crockett, *Chairman.*

Report of the Committee on the Establishment of a Pharmaceutical Corps in the United States Army.—Chairman Kendig, of the AMERICAN PHARMACEUTICAL ASSOCIATION Committee, told about the work of this Committee, particularly that leading up to the introduction of S. 4390 by Senator Sheppard and of its enactment into the law which became effective June 26, 1936. Under its provisions 16 commissioned pharmacists are provided for.

The Committee made several recommendations which were referred to the Committee on Resolutions.

Report of the Committee on Pharmacy Aptitude Tests.—Chairman Klemme presented a list of subjects that the committee believes students should be examined in at the time of their matriculation. Tests for English, arithmetic, chemistry and psychology are already available; tests in physiology, hygiene and botany are in preparation.

The Committee made several recommendations which were referred to the Committee on Resolutions.

Report of the Committee on Professional Relations.—Chairman Schicks, of this Committee, pointed out how pharmacists and pharmaceutical associations may bring about more cordial relations among members of the health professions.

His recommendation that the Committee be continued was referred to the Committee on Resolutions.

Report of the American Council on Pharmaceutical Education.—A tentative draft of standards for the accreditment of colleges of pharmacy was submitted during the year to deans of colleges and secretaries of boards of pharmacy and was revised once before submitting it to the AMERICAN PHARMACEUTICAL ASSOCIATION Convention. After final revision it is the intention to proceed with the task of making the standards effective.

Dr. Youngken, reporter on *Biological Abstracts,* gave the status of that publication. Other reports were made by Dr. Jenkins, Chairman of representatives to the *National Conference on Pharmaceutical Research;* Dean Briggs for the *National Drug Trade Conference;* Dr. Olsen for the *Druggists' Research Bureau;* Dean Dye as representative to the *N. A. R. D.* convention.

REPORT OF THE COMMITTEE ON RESOLUTIONS.

From the Committee on Professional Relations:

That the Committee be continued in order that the good work now begun need not be dropped.—*Adopted.*

From the Committee on Activities of Students and Alumni:

A plan for providing speakers for student groups and a recommendation that student organizations make efforts to obtain time on programs of state pharmaceutical associations was approved in spirit, but the elaborate set-up seemed hardly justified. Colleges were urged to voluntarily coöperate in such activities.

"That colleges act in accordance with recommendation three (that colleges study short courses) in so far as conditions in the various districts make such procedure advisable;" that this project be given further study and consideration by the Committee.

These recommendations were adopted.

From the Committee on Pharmacy Aptitude Tests:

"1. That the Committee, with the same or different membership, be continued for a period of not less than four years to carry this study to a logical conclusion."—*Adopted.*

"2. That aptitude tests in English, arithmetic, biology, chemistry and psychology be applied in the member-colleges at the earliest practicable time, and that the result of the tests be transmitted to the Committee for permanent record and study" (it being understood that participation is voluntary, not compulsory).—*Adopted.*

"3 (*a*) That the Association appropriate funds necessary to finance the Administration of these examinations or

" (*b*) That such member-colleges as desire to join in the study signify their willingness to carry that burden themselves."

The second part of this recommendation was *approved* by the Committee and *adopted* by the Association.

"4. That such schools as enter into the study agree to carry it out for a period of four years and that a close check-up of their graduates who have undergone this test be made so it will be possible for the Committee to report later on the validity of the test."—*Adopted.*

From the Committee on Establishment of a Pharmaceutical Corps in the United States Army:

"1. That the Committee be continued.

"2. That the name be changed to the Committee on Status of Pharmacists in the Government Service.

"3. That it be made a standing committee of the Association.

"4. That through arrangement with the AMERICAN PHARMACEUTICAL ASSOCIATION, the committee members be appointed as members of the corresponding committee of that Association and function therein so that one committee can represent and speak for organized pharmacy about the status of pharmacists in the government service.

"5. That it be instructed to continue its efforts to improve the pharmaceutical service in the Federal and state governments and thereby obtain for pharmacy the recognition and status to which it is entitled."

All these recommendations were adopted.

From the Committee on Problems and Plans:

"That the Executive Committee be authorized to establish a quarterly journal to be called the *American Journal of Pharmaceutical Education* and to appoint an editor, editorial board and collaborators as may seem wise, to make such contracts as are necessary to carry out all details that may arise in connection with the establishment and publication of said journal."

The Committee on Resolutions recommended "that this recommendation be referred to the Executive Committee of the American Association of Colleges of Pharmacy for consideration and recommendation after consultation with the editor of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION if this be deemed advisable. In case this recommendation is not satisfactory to Dean Lyman, the Committee is quite willing to withdraw its recommendation and allow him to personally present his recommendation for consideration."—After discussion, the recommendation of the Committee on Problems and Plans was referred to the Executive Committee with power to act.

The final recommendation of the Committee on Resolutions was "that the American Association of Colleges of Pharmacy express its appreciation of the scholarly address presented before

our Association by President Caldwell of the University of Georgia and that the Secretary thank President Caldwell for his presence and his splendid contribution."—*This recommendation was adopted and the report of the Committee on Resolutions as a whole was adopted.*

PAPERS.

Dean Beard presented a paper on "The Danger in the Present Two-Year Time Requirement in a School of Pharmacy, for Graduation from Association Colleges."

A paper by Dean Wulling and Dr. Douglass on "The Scientific Approach to Problems of Admissions and Guidance in the College of Pharmacy" was presented in abstract by Dean Jordan.

ANNUAL DINNER.

The guest speaker at the annual dinner was President Harmon W. Caldwell of the University of Georgia. He was introduced by Dean Wilson, and Dean Lyman made the response following the address.

OFFICERS FOR 1936–1937.

President: Theodore J. Bradley, Boston, Massachusetts.
Vice-President: William G. Crockett, Richmond, Virginia.
Secretary-Treasurer: Zada M. Cooper, Iowa City, Iowa.
Chairman of the Executive Committee: Ernest Little, Newark, New Jersey.
Member of Executive Committee (to serve two years): Andrew G. DuMez, Baltimore, Maryland; Robert C. Wilson, Athens, Georgia.
Member of the Executive Committee (to serve one year—the unexpired term of Dean Little): Charles B. Jordan, La Fayette, Indiana.
Member of the Syllabus Committee: Eldin V. Lynn, Boston, Massachusetts.

JOINT SESSION.

The report of the Fairchild Scholarship Committee was presented by Chairman Eberle. The winner was Benjamin Philip Hecht, a graduate of the Massachusetts College of Pharmacy.

"What Legal Difficulties May We Get into When We Abolish Assistant Registration?" was discussed by Secretary Christensen of the N. A. B. P.

"Should We Have a Distinctive Degree for the Completion of the Four-Year Course?" was discussed by Mr. Winne for the Boards and by Dean Little for the Colleges.

It was agreed that a committee of four, made up of two representatives of N. A. B. P. and two representatives of the A. A. C. P., be appointed as a committee of four to give this matter further study and report. (This action was ratified by the A. A. C. P. and Dean Jordan and Dean Little were appointed.)

CONFERENCE OF TEACHERS OF PHARMACY.

Dean Motley presided and the following papers were presented and discussed:

"Teaching Laboratory with the Beginning Pharmacy Course," Ina Griffith.

"A Study of Pharmacy Technique," H. George DeKay.

Officers elected for the ensuing year were Dr. Lee, *Chairman;* Dean Hammond, *Vice-Chairman;* Dr. Rising, *Secretary.*

CONFERENCE OF TEACHERS OF CHEMISTRY.

Dr. Uhl presided and the following papers were presented and discussed:

"The Use of Chemistry in Teaching Plant Extractives," Loyd E. Harris.

"Newer Ideas in Teaching a First Course," Eldin V. Lynn.

"The Application of Objective Examinations in Elementary Organic Chemistry," Carl J. Klemme and J. H. Hunter.

Officers elected for the ensuing year were Professor Britt, *Chairman;* Dr. Powers, *Secretary.*

CONFERENCE OF TEACHERS OF PHARMACOGNOSY AND PHARMACOLOGY.

In the absence of Dean Mollett, Dr. Youngken presided as Chairman.

The following papers were presented and discussed:

"A List of Vegetable Drugs for a Course in Pharmacognosy," Kenneth Redman.

"Class Background Studies—A Survey of Some of the Ways Used by Students Attending a College of Pharmacy and Science in Solving the Money Problems," Marin S. Dunn.

"Preliminary Chemical Investigation of the Berries of Rhus Glabra Linné," G. H. McFadden and R. L. McMurray.

"Biographical Notes on Teachers of Pharmacognosy," Ralph D. Bienfang.

"Cultivation of Ephedra," Lovell D. Hiner.

In addition to these, two papers were read by title:

"Drug Collection and Cultivation in Mississippi," W. W. Barkley.

"General or Pharmaceutical Botany for Pharmacy Students," Lovell D. Hiner.

Dr. B. V. Christensen made a brief verbal report about "Crude Drug Imports."

Officers elected for the ensuing year were as follows: *Charman*, Dr. Bienfang; *Secretary*, Dr. Goodrich.

CONFERENCE OF TEACHERS OF PHARMACEUTICAL ECONOMICS.

Dean McCloskey presided. Two papers were presented:

"What Is a Shelf Warmer?" Paul C. Olsen.

"Price Stabilization," Robert W. Rodman.

The following officers were elected for the ensuing year: *Chairman*, Dean Rivard; *Secretary*, Dr. Clark.

ZADA M. COOPER, *Secretary.*

Approved: Ernest Little, *Chairman* of Executive Committee.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Dr. Thomas Parran, Jr., Surgeon General of the U. S. Public Health Association was elected president of the American Public Health Association at the annual meeting, recently held in New Orleans. He is directing efforts for the control of syphilis and druggists are in position to aid the Surgeon General in this important work.

THE TRAINING OF CHEMISTS FOR WORK IN BIOCHEMISTRY AND MEDICINE.

BY SIR HENRY DALE.

In recent years chemistry has newly and rapidly invaded the fields of functional biology and the sciences related to medicine. Even in the study of the complex phenomena of immunity, the results of recent years have shown a beginning of exact description in terms of organic and physical chemistry. Up till about 1920 only some four hormones were known as separable entities, and of these only two had been chemically defined. In the last few years a whole series has been chemically isolated, and several have been made artificially by synthesis. Of the vitamins, known a few years ago only by the effects of their absence, four or five have been chemically identified, and at least three have been artificially prepared. Sex hormones, one vitamin, carcinogenic substances, and heart tonics have all been chemically related to the typically inert sterols.

New synthetic compounds of chemotherapeutic value give promise of control over some of the most deadly infections of man, especially in the tropics. This country, which holds more tropical possessions than anyone else in the world, and is doing very little research on tropical diseases, cannot possibly justify its retention of large areas in the tropics while depending on others to make them habitable for her. The whole orientation of therapeutics is being shifted from the effects to the causes of disease. It is suggested that this new and increasing domination of biological and medical research by chemical methods and ideas, represents the greatest of all the services of chemistry to the community. It calls for chemists of the highest ability, so trained that they can fully coöperate and share the planning of future progress with those primarily trained in biology and the medical sciences. The recent extensive advances in medical and biochemical medicine are due firstly to improvements of chemical, especially micro-chemical, technique, and secondly to a few remarkable successes which have fired the imaginations of leading chemists, who now vie with one another in solving problems of outstanding biological interest, for so long considered the realm of the second-rate or armchair chemist.—From *Pharmaceutical Journal* (England).

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and Branches shall become the property of the Association with the understanding that they are not to be published in any other publication prior to their publication in those of the Association, except with the consent of the Council." —Part of Chapter VI, Article VI of the By-Laws.

ARTICLE III of Chapter VII reads: "The objects and aims of local branches of this Association shall be the same as set forth in ARTICLE I of the Constitution of this body, *and the acts of local branches shall in no way commit or bind this Association, and can only serve as recommendations to it.* And no local branch shall enact any article of Constitution or By-Law to conflict with the Constitution or By-Laws of this Association."

ARTICLE IV of Chapter VII reads: "Each local branch having not less than 50 dues-paid members of the Association, holding not less than six meetings annually with an attendance of not less than 9 members at each meeting, and the proceedings of which shall have been submitted to the JOURNAL for publication, may elect one representative to the House of Delegates."

Reports of the meeting of the Local Branches shall be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten with wide spaces between the lines. Care should be taken to give proper names correctly and manuscript should be signed by the reporter. *Please advise us of changes in Roster and mail reports promptly.*

Proceedings will be continued in December Journal.

BALTIMORE.

The first fall meeting of the Baltimore Branch, AMERICAN PHARMACEUTICAL ASSOCIATION, was held on Thursday evening, October 15th, at the New Howard Hotel, Baltimore. Thirty-five members and guests attended.

The business session was called to order by President Hewing at 8:00 P.M. Minutes of previous meeting were read by the secretary and approved.

A report from delegates attending the national convention of A. PH. A. at Dallas, Texas, in August, was presented by Mr. C. Jelleff Carr for the delegation. Mr. Carr gave an interesting and comprehensive report on this annual meeting; with a detailed account of the resolutions passed by House of Delegates. These resolutions were the subject of informal discussion at close of the report.

Under the heading of new business, communications from Secretary E. F. Kelly were read. One of these referred to pending examinations for applicants for appointments in Medical Administrative Corps, Regular U. S. Army, which will be held at various points, from December 14th to 18th, inclusive. Eight such appointments, which carry the rank of Second Lieutenant, are now open to properly qualified pharmacists. These appointments represent the first fruits of long-continued and persistent efforts on the part of the AMERICAN PHARMACEUTICAL ASSOCIATION to secure recognition of Pharmacy on a full professional basis in the armed forces of the Country. The qualifications set up for applicants for these appointments aroused considerable interest among members present, and during a discussion of these eligibility requirements, Dr. Robert L. Swain was called on for comments regarding the law which creates these positions in the Army. It is a source of gratification to the Baltimore Branch that several of its members have been in the forefront of recent battles waged by the parent body to elevate the professional standards of Pharmacy, and to secure recognition of this professional status by the general public and its Governmental agencies.

Dr. Swain offered the thought that pharmacy as a profession is being placed on trial through the moderate success attending efforts to secure proper recognition in the Army, Navy and Public Health services of the Government. That extension of larger opportunities to pharmacy in these Services will depend a great deal on the efforts and accomplishments of the pharmacists who will shortly be given apportunities for service in these fields.

On motion of the Secretary, duly seconded, the following pharmacists were elected to membership in the Baltimore Branch: Robert A. Goldsmith, Herman Drukman, Milton M. Frank, Earl M. Norris and Miss Amelia Di Dominicis.

The guest speaker was introduced by President A. N. Hewing with a few appropriate remarks. Mr. McQuade, the well-known Editor of *Drug Topics*, enjoys a wide personal ac-

quaintance among pharmacists, and has been in close touch for years with the various movements and outstanding personalities in the drug merchandising field. On this occasion he made a strong effort to impress those present with the serious commercial difficulties now confronting the independent retail pharmacist. He emphasized the need for both individual and collective efforts along professional lines, if the small independent store is to retain or enhance its position as the major distributing group for drug products in the United States. In answer to questions, he stated that in his opinion cut prices on proprietary products did not constitute the greatest threat now facing the independent pharmacist; and that it would hardly be possible for manufacturers, even if so minded and with the support of proposed State laws to ever make price maintenance on their products more than about 80 per cent effective. He cited several loopholes which have been and can still be used to defeat such efforts on the part of manufacturers.

At the beginning of his address the speaker warned that, contrary to general belief, the important chain-store organizations have no intention of allowing small independent stores to absorb the lion's share of the prescription compounding business in localities served by their units. He cited the successful efforts of one prominent organization to popularize its prescription and drug service to physicians; he emphasized the fact that prescription departments in stores of this particular chain were among the cleanest and most attractive in appearance of any which he had noted in his extensive travels. Statistics showed that this eye-appeal was not being lost on either the public or local physicians.

While the speaker expressed a personal preference for the open or semi-open type of prescription department in retail establishments, he urged that more attention be given to cleanliness and attractiveness in the average prescription department, regardless of type or arrangement. He voiced a fear that inaction in this respect was more likely to undermine public confidence in the independent neighborhood pharmacist, and to contribute more largely to his eventual business downfall, than any other business factor now existing.

Regarding collective activities among independent retail pharmacists the speaker advanced the idea that groups of these should employ a full-time detail representative to call on physicians and dentists; providing a direct and continuous contact with these groups, and advancing the general interests of the employing pharmacists.

Without discussing side-lines in general the speaker singled out cosmetics as being one of the most profitable, and at the same time most generally neglected lines of related merchandise now sold in drug stores. Originating as pharmaceutical products, cosmetics have now become one of the most profitable lines featured by department stores and specialty shops. He blamed this development largely on the failure of druggists to see the sales possibilities inherent in these products, and intelligently to follow up their promotion. Experience has shown that cosmetics must be sold by intelligent and persistent effort, coupled with attractive displays.

In expanding on this theme Mr. McQuade demonstrated a rare knowledge of feminine characteristics and psychology. His classical exposition of the virtues of cosmetics, and of the rights and duties of the ladies in respect to the use of same, added much to the knowledge and enjoyment of those present. Some pharmacists present probably left the meeting with a guilty consciousness of having neglected a duty in failing to cater to the needs of the feminine residents of their respective communities for these important necessities.

The presentation held the attention of the members.

ROBERT S. FUQUA, *Secretary.*

CHICAGO.

The first meeting of the Chicago Branch for the year 1936–1937 was held Tuesday evening, October 20th, at the University of Illinois College of Medicine.

President Morrison opened the session with remarks pertaining to the meetings for the rest of the year and expressed the desire of having those taking an active interest in the Branch to make an effort to increase the attendance at the meetings and to secure new members for the ASSOCIATION. The success of the Dallas meeting was mentioned.

Robert Elich presented motion pictures taken at the Plant Science Seminar and at the Dallas Centennial Exposition. The color films of the Exposition were a masterpiece in amateur photography.

C. B. McDermott, a graduate of the University of Illinois College of Pharmacy, discussed "Malaria and Its Treatment" and followed the discussion with motion picture films showing

malaria-infested swamps and the complete cycle of the malaria from malaria to mosquito to man.

An interesting point was brought out that the malaria do not thrive in alkaline waters but infest only the acid waters.

Cases of malaria were cited in regions far from known malaria-infested regions and this is ascribed to travelers who had previously been in those parts.

Malaria eradication can be accomplished, according to Mr. McDermott, by the cleaning up of mosquito-infested regions by proper spraying and oiling of the waters, screening and the treating of the humans to render their blood free of the malaria. The efficiency of various products, Atabrine and Plasmochin was shown in comparison with quinine, some of them deemed superior.

The discussion and motion pictures were highly enjoyed by the seventy-six members and friends present.

LAWRENCE TEMPLETON, *Secretary.*

PHILADELPHIA.

The October meeting of Philadelphia Branch, AMERICAN PHARMACEUTICAL ASSOCIATION, was held in the auditorium of the Philadelphia College of Pharmacy and Science, on October 14th. President L. L. Miller presided. The minutes of the May meeting were read and approved.

The secretary read a letter from New York Branch, A. PH. A., advising that the formal award of the Remington Honor Medal would be made to Prof. E. N. Gathercoal at a banquet on October 19th, at Hotel Pennsylvania.

The name of Iber Mellan was proposed for membership in the parent and local bodies; he was elected by New York Branch and his name submitted to the former for election.

H. Evert Kendig reported progress for the Professional Relations Committee. James C. Munch stated that the Program Committee had arranged a series of interesting numbers and speakers for the year. Ambrose Hunsberger reported progress for the Committee on Practical Pharmacy. James C. Munch gave a brief résumé of the Dallas A. PH. A. Meeting. President Miller appointed John Lynch a member of the Membership Committee, and introduced James C. Munch as *Second Vice-President* of the AMERICAN PHARMACEUTICAL ASSOCIATION. The latter introduced the speaker of the evening, Dr. James F. Couch, chemist in the Bureau of Animal Industry, Washington, D. C. The subject of the latter was "Range Poisoning," illustrated by lantern slides, showing various poisonous plants, menaces to the stockmen, because of loss of livestock, amounting to several millions of dollars annually. After the close of the address, Dr. Couch answered questions proposed; a rising vote of thanks was given the speaker.

GEORGE E. BYERS, *Secretary.*

ST. JOHN'S UNIVERSITY.

The A. PH. A. Branch of St. John's University held its first meeting for the season on October 7, 1936. The two guest speakers for the evening were Dr. Coultier, Chief Bacteriologist of Kings County Hospital, and Dr. Millard. Dr. Coultier stated that it was difficult to control cultures of diphtheria bacillus, because of variation in the results of inoculation of the broth. He spoke of the organism which causes tetanus. At the opening of his address he defined toxin, endotoxin, exotoxin, etc.

Dr. Millard's talk was particularly appreciated, due to its current interest. He discussed the newly proposed charta which is to be voted on (was voted on in November election). It is a tax measure which builds up a reserve to take care of the payment of the taxes provided by the measure.

Dean Dandreau introduced the speakers and offered them a vote of thanks.

The Branch desires to have a successful season and it is intended to plan the meetings accordingly.

ISABELLE SEISMANN, *Secretary.*

NEW YORK.

Reference to the October meeting of New York Branch, AMERICAN PHARMACEUTICAL ASSOCIATION, at which time the Remington Medal Award was made, appears in October JOURNAL, page 846.

The presiding officer, F. C. A. Schaefer, introduced President George D. Beal, of the AMERICAN PHARMACEUTICAL ASSOCIATION, who addressed the members and guests and the medalist:

ADDRESS ON PRESENTING THE REMINGTON HONOR MEDAL TO EDMUND NORRIS GATHERCOAL.

BY GEORGE D. BEAL.*

We are meeting this evening for a twofold purpose. We wish to pause in our daily routine to do honor to the memory of one of the great masters of American pharmacy, the late Joseph Price Remington. And in remembrance of our departed friend, we wish to present a testimonial, bearing a likeness of the master, to one of those men who has joined in picking up and carrying forward the torch of pharmaceutical progress from the place where he laid it down. The AMERICAN PHARMACEUTICAL ASSOCIATION is deeply indebted to the New York Branch for its thoughtfulness in making possible this memorial to our great teacher. Wherever students of pharmacy are gathered together, the name of Remington is certain to come into the conversation, though now there are fewer persons who have personal memories of him.

"Time flies, you say? Ah, no!
Time stays, we go."

Professor Remington was not the first teacher of pharmacy in America, he did not organize the first college of pharmacy, produce the first textbook, edit the first pharmacopœia or write the first dispensatory. He did, however, live through a significant transition period in the development of the United States. It was a time when the movement of population from agrarian to urban districts was taking shape, when manufacturing was becoming centralized, when medicine and chemistry were changing from arts to exact sciences, when communities instead of being self-contained and self-supporting were beginning to take advantage of their local industrial superiorities and become contributing units in a commercial nation.

American pharmacy needed men then to organize, systematize and codify pharmaceutical knowledge and practice. Men like Maisch, Procter, Rice and Remington were those who bridged the gap between the old-fashioned empiricism and the modern systematic organization of the apothecaries art. What Liebig, Wöhler, Fresenius, Bunsen and Ostwald did in the development of modern chemistry from the residues of alchemy was repeated for pharmacy by these teachers. We do not detract in any way from the honor due to those other teachers when we single out Professor Remington as the standard by which to judge our fellow workers of to-day.

Professor Remington was more than a tradition to the founders of this medal that we are presenting to-night. He had met with them year after year in the sessions of the AMERICAN PHARMACEUTICAL ASSOCIATION. They had served, under his chairmanship, in the exacting work of revision of the world's foremost pharmacopœia. They had followed his system of instruction, and were indebted to him for the compendiums of pharmaceutical knowledge that were always within reach of their hand. They knew him as a man to whom they could go for counsel and who could hear all sides of a controversy before giving judgment. And best of all they knew him as a friend. It was very fitting, then, that they should seek to perpetuate his memory in this way, and that the recipient of the token should be selected by Remington's living successors in the presidency of the AMERICAN PHARMACEUTICAL ASSOCIATION.

The qualifications required of the recipient of this medal and the manner of his selection combine to make it a most significant testimonial, not only of the medalist's prowess in the science of pharmacy, but also of the esteem in which he is held by the elected leaders of the profession. The award is to "the man or woman who has done most for American pharmacy during the preceding year or whose efforts during a number of years have culminated to a point during the preceding year where the result of those efforts would be considered as being the most important and advantageous for American pharmacy."

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* Assistant Director, Mellon Institute of Industrial Research, and President, AMERICAN PHARMACEUTICAL ASSOCIATION.

The recipient is selected according to rules laid down by the founders of the medal, as follows:

> "That the medal be awarded by a standing committee consisting of all the past-presidents of the American Pharmaceutical Association, and in case the number of living past-presidents is less than five, the senior past vice-presidents of the American Pharmaceutical Association are to be drawn upon in sufficient number to create a committee of five."

Although the medal was created less than twenty years ago, the following list of medalists and their citations is thoroughly representative of pharmaceutical progress from the close of the 19th century.

> James Hartley Beal, President, Secretary and first Editor of the JOURNAL OF THE A. PH. A., Chairman of the Board of Trustees of the United States Pharmacopœia, educator and legislator.
>
> John Uri Lloyd, President of the A. PH. A., writer of fiction, philosophy and scientific fact, founder of modern colloidal chemistry, pioneer in pharmaceutical science and pharmaceutical manufacturer.
>
> Henry V. Arny, President of the A. PH. A., founder of the National Conference on Pharmaceutical Research, chemist, author and educator.
>
> Henry H. Rusby, President of the A. PH. A., botanist, explorer, educator.
>
> George M. Beringer, President of the A. PH. A., proposer of the A. PH. A. Recipe Book, retail pharmacist and research worker.
>
> Henry M. Whelpley, President and Treasurer of the A. PH. A., teacher, pharmaceutical editor and archæologist.
>
> H. A. B. Dunning, President of the A. PH. A., dispensing and manufacturing pharmacist, scientist and chairman of the Headquarters Building Fund.
>
> Charles H. LaWall, President of the A. PH. A., successor to Remington in educational work, consulting chemist and historian.
>
> Wilbur L. Scoville, Chairman of the National Formulary Revision Committee, educator, editor and research pharmacist.
>
> Edward Kremers, educator, organic chemist, tiller of the field of phytochemistry, great historian of chemistry and pharmacy.
>
> E. Fullerton Cook, assistant and successor to Remington in pharmacopœial work, Chairman of the Committee of Revision of the U. S. P., author and educator.
>
> Eugene G. Eberle, President and Editor of the JOURNAL OF THE A. PH. A., teacher, and historian of American pharmacy.
>
> E. F. Kelly, Treasurer and Secretary of the A. PH. A., educator, association official, public health worker and promoter of pharmaceutical recognition.
>
> Sir Henry S. Wellcome, pharmacist of two nations, servant of science and the public health professions, promoter of research in pharmacy, medicine and chemistry, and public benefactor.
>
> Samuel L. Hilton, President and Chairman of the Council of the A. PH. A., association worker, representative of dispensing pharmacy, research worker and legislator.

Into this distinguished company it is our privilege and pleasure to admit our guest of honor this evening. His life and accomplishments are known to many of us, but it is quite fitting that they be reviewed here in order that all may agree upon the wisdom of the jurors' decision.

Edmund Norris Gathercoal was born near Sycamore, Illinois (even in birth he was true to botany) in 1874. His paternal grandfather came to this country from southern England in 1857, and on his mother's side his ancestry is Pennsylvania Dutch, truly a sturdy parent stock. After Edmund had finished high school his family moved to Chicago, and in 1891 the boy entered the drug store of T. W. Sollitt as an apprentice. Mr. Sollitt, a graduate of the Chicago College of Pharmacy, was naturally a well-trained pharmacist, and it became young Gathercoal's ambition to qualify as his employer had done, whereupon he enrolled in Mr. Sollitt's alma mater, now the College of Pharmacy of the University of Illinois. We now find young Gathercoal showing

those studious traits that have marked him to the present, so that he graduated in 1895 at the head of his class, and as a reward for his proficiency in botany and pharmacognosy he was awarded a prize of a microscope upon graduation. His zeal for greater knowledge of the action of drugs led him to matriculate in Rush Medical College, but he was compelled by adverse circumstances to withdraw at the end of his sophomore year.

The young apothecary then embarked upon a professional career, and within two years had established his own business in Wilmette, one of Chicago's residential suburbs, where he conducted a prosperous pharmacy for eight years. His interest in the College—which had meanwhile become affiliated with the State University—remained warm, and in 1907 he disposed of his drug business and accepted a full-time teaching position on the faculty of the school, where he has successively advanced from an instructorship to the rank of Professor and member of the University Senate.

Professor Gathercoal has given most unselfishly of his time to the advancement of pharmacy. He served as secretary of the Chicago Branch of the A. PH. A. for fifteen years, and still is willing to aid in the planning of programs. The A. PH. A. has frequently called upon him for committee service, which has been given cheerfully. He was our First Vice-President in 1923 and Chairman of the Scientific Section in 1919, when we last met in this city and in this hotel. A thorough student of the literature of botany and pharmacognosy, he has been an assistant editor of the pharmacognosy section of *Botanical Abstracts*, and an able assistant in the preparation of the Report on the Progress of Pharmacy for the YEAR BOOK of the A. PH. A. The speaker can relate with deep appreciation the wise counsel given by him while our committee was formulating the plan for the change from the Year Book to the monthly publication of Pharmaceutical Abstracts.

His orderly habits of thought and presentation led to his election to the Revision Committee of U. S. P. X, and his helpful participation in that work brought about his reëlection to the Committee for the preparation of U. S. P. XI. Through his struggles in translating into understandable English the physical descriptions of botanic drugs he realized the shortcomings of our color nomenclature. During the work on U. S. P. X he demonstrated a system for the comparison of the colors of powdered drugs, and began to agitate for a rational system of color names for pharmacopœial use. He persuaded the Board of Trustees of the U. S. P. to provide for a conference on color nomenclature and an exhibition of color immediately preceding the Pharmacopœial Convention of 1930, from which developed a permanent organization, the Intersociety Color Council, with Professor Gathercoal as its first chairman.

When our dear friend Professor Arny found, much to our dismay, that his educational and administrative duties forbade his further engagement in outside activities, there came to us the problem of finding another leader for the National Conference on Pharmaceutical Research. Following Horace Greeley's advice, we went west and found in the person of Professor Gathercoal a chairman under whom the Conference has prospered.

As an author and reporter in the field of pharmacy he has been a prolific writer. He was one of three assistant editors of the last edition of Kraemer's "Scientific and Applied Pharmacognosy," and has lately found time to prepare, with the collaboration of his associate, Dr. E. H. Wirth, the most recent textbook on pharmacognosy. A list of his appearances in print from 1909 to 1936 reveals 41 articles, 9 book reviews, 91 reports of branch proceedings and 199 abstracts, for a total of 250,000 words, all in addition to his collaboration in the reports of the National Conference on Pharmaceutical Research, his textbooks and the National Formulary 6th edition. It is only when one recalls the explanation of the method of writing a book given by Professor Lloyd to Professor Arny, "Write only a page a day and you can do a book a year," that we understand how an otherwise busy man can keep his name in the indices of the journals. Honors that have come to him previously include the Ebert Prize of the A. PH. A., the degree of Master of Pharmacy, *honoris causa*, from the Philadelphia College of Pharmacy and Science, and election to the honorary pharmaceutical fraternity Rho Chi, and the honorary scientific society Sigma Xi.

The National Formulary is a very precious possession of the AMERICAN PHARMACEUTICAL ASSOCIATION. It shares with the United States Pharmacopœia an equal responsibility as a standard under state and national laws for the control of drug merchandising. The responsibility for the production of this volume of standards is a greater one than that held by any other pharmaceutical association, therefore the ASSOCIATION places one of its greatest trusts in the hands of the

man whom it selects as Chairman of the National Formulary Revision Committee. The preparation of N. F. VI, like that of U. S. P. XI, has been fraught with much more difficulty than that surrounding the editing of any of its predecessors. N. F. VI was prepared while words were flying over new food and drug legislation. Both volumes were attacked as collections of "frozen" standards. There was agitation for government revision and control. The Formulary was under attack by a section of the medical press for perpetuating worn out and useless simples and drugs, and from sections of pharmacy because it did not provide standards for all of the things that were prescribed by physicians. Through all of the turmoil Chairman Gathercoal has preserved a calm, unhurried, outwardly unperturbed and judicial attitude. The most advanced National Formulary has appeared on time, and has been accepted by the pharmaceutical world as an authoritative work. Along with the volume have come plans for progressive research and continuous revision, marking a new era in National Formulary work. Surely the past-presidents have chosen well in selecting the guiding head of this project as the recipient of the 1936 impression of the Remington Honor Medal.

According to the rules governing the award of the Remington Honor Medal, it is presented by the senior past-president of the New York Branch, or in his absence by one of his successors in that office. Perhaps I should not have called your attention to the transmutation that is about to take place, or I may be deprived of what is to be to me one of the greatest pleasures of my life, the presentation of this medal to a dear friend and former university colleague.

Professor Gathercoal, this is for me an impressive yet happy occasion, as I know it is for you. We served different departments of the same great university for many years, under her motto of "Learning and Labor," and joined in singing her song of "Loyalty." We have worked together on problems of the Pharmacopœia, the Research Conference and the A. PH. A. It is because of what I have learned of you during this time that I have accepted the responsibility of acting in this capacity this evening. It is the right of every English-speaking man to be tried by a jury of his peers. Those persons in whom our members have placed their greatest trust have selected you as the recipient of the Joseph Price Remington Honor Medal for 1936, in recognition of your prowess as an educator, as a research specialist and as Chairman of the National Formulary Committee. Therefore, in the name of the New York Branch, and on behalf of the entire membership of the AMERICAN PHARMACEUTICAL ASSOCIATION, I hand you this medal, with our sincere thanks for your untiring labor in the cause of American pharmacy.

RESEARCH ACTIVITIES IN CONNECTION WITH THE REVISION OF THE U. S. PHARMACOPŒIA AND THE NATIONAL FORMULARY.*

BY E. N. GATHERCOAL.

DEFINITION AND SCOPE OF RESEARCH.

Research, as defined by Boyd,[1] consists merely of searching for new knowledge or of trying to prove something. It is elemental and universal. It is applicable to any field of human endeavor. It is essentially experimentation—experimentation under conditions that are carefully controlled.

Research by the detective leads to evidence; by the reporter, to news; by the politician, to new taxes. Research by the agronomist leads to improved or new crops; by the cook, to finer meals; by the dietitian, to fewer dyspepsia remedies. Research by the educator leads to clearer thinking; by the sociologist, to improved living; by the U. S. P. and N. F. Revision Committees, to better health.

Every one, no matter what he does, should understand the principles of research. Nothing

* Read before the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION after the presentation of the Remington Medal, October 19, 1936.

[1] "Research—the Pathfinder of Science and Industry" (1935), by T. A. Boyd, Research Division, General Motors Corporation, is in a pleasing and most interesting popular style, yet every page stimulates thought. The book is especially recommended to young people who are interested in research. We have drawn upon it extensively for this address.

so increases one's fund of knowledge as consistent research, even though on a small scale. According to Emerson, knowledge is power. Unfortunately, statements are often matters of opinion rather than of knowledge. For instance, the ten-year old brother, who has just come from the pump with a pail of water for dinner, says that it is half a mile from the kitchen door to the pump, but his elder brother says it is but thirty feet; Dad, who set the pump some years before, has never measured the distance, so he gets the tape and he and the boys carefully measure it. They proudly announce to the family at dinner that it is fifty-six feet, five and one-quarter inches from the center of the kitchen door sill to the center of the pump cylinder. The boys can tell you, nearly fifty years later, what that distance was. They know it, because they experimentally determined it.

As research is concerned with new knowledge and new things, the question sometimes arises: What is new knowledge or a new thing? One of the wisest of men has written: "There is no new thing under the sun" (Eccl. 1:9). However, the infant starting out in life at one day old has no knowledge. All things and all facts are "new" to him. Perhaps we should distinguish between "private" research and "public" research: the former for the private knowledge or use of the individual; the latter for publication to the world. Each person acquires a goodly part of his knowledge by experiment. The young child learns that when he touches fire or the hot stove his fingers are "burned." It is "new" knowledge to him, but not "new" to the world. The distance from the kitchen door to the pump was "new" knowledge both to the family mentioned above and to the world; it was of interest to the family but would not be of interest to the world. "Private" research along any line of knowledge should never be discouraged, but the publication of the results of research should be carefully considered from the point of previous publication and from the point of public interest; also, from the point of private interest, which sometimes, because of the desire of private gain, prohibits publication of research results of great value to the world.

Pure and *applied* research are frequently distinguished. C. E. K. Mees says that the difference is "merely one of intention." The intention of one who enters "pure" research is simply to advance human knowledge, while the worker in "applied" research seeks to discover new knowledge or new things that may be applied in a practical way to useful purposes. It is frequently the case, however, that the worker in "pure" research makes discoveries that have a very practical application, and, on the other hand, the worker in "applied" research may develop some of the most fundamental and important truths of science. Mendeleeff developed the periodic classification of the chemical elements by "pure" research. This periodic table has since become of great practical importance to all workers in chemistry, particularly in "applied" chemistry.

The *varieties* of research are almost innumerable. Every science and profession and practically every industry is actively engaged in research at the present time. There are underlying principles common to all of these varieties of research, yet each has some peculiarities of its own. Allied researches form such outstanding groups as medical research, industrial research, agricultural research, sociological research, mathematical research, etc. These groups are largely made up of scientific researches, such as chemical, physical, biological, mechanical, psychological, educational, astronomical and so on *ad infinitum*. Each general science, each philosophy, each industry, is split up into specialized sections or divisions, and in each of these divisions several named varieties of research are known. The total number of named varieties of research may run into the thousands.

Medical research comprises a large group of scientific and sociologic researches, and is of outstanding interest to the whole world because of its humanitarian accomplishments in the relief of pain, the mitigation of disease and the lengthening of the span of life. In 1800 the average length of human life in civilized countries was 27 years; to-day the average is 57 years. An increase of 100 per cent in the average span of human life is perhaps the outstanding research achievement in all history.

Pharmacy for more than a century has played an important part in medical research. The discovery and improvement of the extraction of vegetable and animal drugs; the extraction and purification of the active principles of plants; the discovery and development of dosage forms of medicine, such as coated pills, capsules, cachets and ampuls; the development of masking agents and pleasant vehicles for disagreeable medicines; and the discovery of new medicinal plants, chemi-

cals and biologicals are all important pharmaceutical contributions to medical science during the past century and particularly the last half century.

U. S. P. and N. F. research is pharmaceutical research concerned with the standardization of medicines. It endeavors to present new types of standards, new standards within established types and the improvement of established standards.

The creed of the research laboratory according to Dr. George D. Beal is as follows:

1. To provide the specialist with ample opportunity for expression.
2. To make available to industry and to civilization the best of scientific knowledge.
3. To add, through industrial development or scientific achievement, something to the sum total of human knowledge that will benefit mankind.

METHODS OF RESEARCH.

Research is as ancient as man. Historically it appears to have flourished in ancient Egypt and Babylonia, and in the Grecian and Roman golden ages. It was particularly dormant during the Middle Ages, but began to revive with the great awakening in art and literature at the Renaissance. Beginning with the nineteenth century it developed more rapidly in Europe and especially in the young United States. During the last half century its development has been much accelerated, until to-day its accomplishments are so numerous that the individual mind cannot comprehend them.

The *early experimenters* worked mostly alone, usually in great need, sometimes in dire hardship. If they had money or income they poured it into their work, until perhaps they were poverty-stricken and in debt. They usually had but little encouragement from friends and advisors—frequently obstacles and ridicule. They had few of the mechanical and technical aids of to-day, but were forced to prepare their own apparatus and instruments. Morse prepared every foot of insulated wire that he used with the telegraph, winding it with cotton by hand. Leewenhoek was a small-town drygoods merchant, but he ground the lenses and made the microscope with which he saw microörganisms as minute as bacteria, and became the first to describe them. Marie and Pierre Curie toiled unceasingly to separate radium from vast quantities of earth. Scheele in his meager laboratory at Upsala or in his apothecary shop at Köping discovered many important medicines.

As Longfellow, in Keramos, writes:

"Thine was the prophet's vision, thine
The exultation, the divine
Insanity of noble minds
That never falters or abates,
But labors and endures and waits
Till all that it foresees it finds
Or what it cannot find, creates!"

These "lone-handed" experimenters brought to the world some of its most important discoveries. From the dawn of history to the beginning of the present century, their names constitute a long and remarkable roll. As examples, we mention just seven almost at random: Hippocrates (460 B. C.), the father of medicine; Archimedes (260 B. C.), the discoverer of fundamental laws of mechanics; Galileo (1600 A. D.), the founder of astronomy; Leewenhoek (1650 A. D.), first to use the microscope and discover bacteria; Sir Humphry Davy (1800 A. D.), a great chemist; Michael Faraday (1820 A. D.), the founder of electrical science; and Pelletier (1820 A. D.), a pharmacist and the discoverer of many alkaloids.

The earlier pharmacopœial revision committees depended for the improvement of the book almost entirely on the published results of research pertaining to the standardization of medicines. Such publications in 1820 and even up to 1860 or 1870 were few. As the pharmaceutical literature improved and became more voluminous, scientific progress in the Pharmacopœia became more marked. Some research, no doubt, was carried on by individual members of the several revision committees from the very beginning of the Pharmacopœia, but evidence of this is difficult to obtain from the history of the Pharmacopœia. About the middle of the nineties of the past century, Dr. Charles Rice, Chairman of the U. S. P. Revision Committee, established a U. S. P. fellowship at the University of Wisconsin. With the eighth decennial revision of the Pharmacopœia

(1905) and the third edition of the National Formulary (1906), research by the individual members of the revision committees became more evident.

The preparation of the chemical and plant drug monographs, introduced into the fourth edition of the National Formulary (1916), was a huge task and involved much research. The research accomplished by Dr. E. L. Newcomb and his collaborators on the ash-content of drugs (1920–1925) involved more than 10,000 ash determinations. The results of this work have never been published, though they have been extensively utilized in the Pharmacopœia and the National Formulary. The microscopic measurement of tissue elements and of starch grains and crystals in plant drug powders by Fischer and Newcomb involved more than 100,000 figures. The results of this work were extensively incorporated into the Pharmacopœia and the National Formulary and markedly increased the scientific standing of the plant drug monographs in both of these books. All of this research was of the "lone-handed" type, poorly financed, ridiculed by some, unappreciated by others, unpublished and largely unrecognized. In the production of the eleventh revision of the Pharmacopœia and the sixth edition of the Formulary, research has been much further developed, collaborative work has been undertaken on a large scale and more publicity has been given to it.

Since the beginning of the present century, *organized research* has gradually replaced the lone-handed experimenter. A research organization of to-day usually implies a separate laboratory or laboratories, extensive equipment, suitable apparatus, a large library, liberal financing and highly qualified personnel. It gives the experimenter assurance of a living salary, comfort in his work and the assistance he needs. It means systematic, well-directed coördinated effort. It results in more prompt, accurate and numerous accomplishments, in a follow-up of new ideas, and in a quicker, more extensive utilization of the new knowledge. It is the underlying cause for the marked growth of research during the present century.

It is now time that U. S. P. and N. F. research be organized. This research should be centered in a suitable laboratory, be provided with equipment, apparatus and library and be in charge of an efficient personnel. It needs to be adequately financed and publicly recognized. The Pharmacopœia and the Formulary, as legal standards for medicines, have advanced in public esteem during the last five years, and a high degree of scientific accuracy is now required of them.

Chairman E. Fullerton Cook of the U. S. P. Revision Committee clearly set forth in his report before the AMERICAN PHARMACEUTICAL ASSOCIATION at Dallas this year, the need of continuous revision. The day of the decennial revision is past. This Committee has made definite arrangements to issue annual supplements to the Pharmacopœia and these will soon become annual revisions of the Pharmacopœia. These annual revisions, however, cannot depend exclusively upon published research. It is necessary to check standards and where these fail, their improvement is demanded. Entirely new methods of standardization are constantly required. We can no longer wait until individual initiative has produced these methods. Furthermore, research in the pharmaceutical industrial field, as also in the several scientific fields on which pharmacy is based, is tending more and more to monopolize its results and prohibit their public use. This means that some of the really great advances in pharmacy cannot be utilized in the legal books of drug standards until years after they have been discovered. The revision committees cannot expect their chairmen to serve as directors of research, or their sub-committee chairmen to serve as departmental research heads. Finally, the whole subject of research in connection with these legal standards must be brought under one head and handled as one great section of pharmaceutical research, if the best results are to be had.

C. E. K. Mees *classifies* organized research as follows:

1. University Research Laboratories
2. Government Research Laboratories
3. Foundation Research Laboratories
4. Industrial Research Laboratories, maintained by individual firms
5. Industrial Association Research Laboratories
6. Industrial Fellowship Laboratories
7. Private Consulting Research Laboratories

1. Almost every American university now has one or more buildings and separate staffs devoted to research. Dr. Karl T. Compton, President of the Massachusetts Institute of Tech-

nology, stated in his address at the semi-centennial of Sigma Xi: "Educational institutions have always been the places where the great bulk of new discoveries are made and ideas formed, and this will continue to be so, since there exist no other organizations where such studies can be similarly pursued." Dr. Roger Adams, when president of the American Chemical Society, said, "The basic and fundamental information for more than 95 per cent of the industrial processes has been originally discovered and described by the university investigator."

Many of the colleges of pharmacy take an important place in the graduate faculties of their universities and contribute extensively to their research accomplishments. The earliest thesis under the direction of an American pharmaceutical faculty offered in connection with the granting of the degree of doctor of philosophy of which we have knowledge is that presented by Oswald Schreiner at the University of Wisconsin in 1902. The pharmacy colleges of the Universities of Florida, Maryland, Washington, Michigan and Wisconsin are especially noted for their research achievements.

2. The Government Research Laboratories include those in the U. S. Bureau of Standards and the U. S. Bureau of Mines, as well as the U. S. Food and Drug Administration Laboratories, and many others.

3. The Rockefeller Institute for Medical Research is an outstanding research foundation; also, the Bartal Research Foundation of Franklin Institute, and the Laboratory of the American Medical Association are of this type. The new laboratory of the AMERICAN PHARMACEUTICAL ASSOCIATION at Washington, which eventually will be well endowed, belongs in this group. The U. S. P. and N. F. research activities should center in this A. PH. A. Laboratory.

4. The Laboratories of the General Electric Company, the General Motors Corporation, the Eastman Kodak Company and sixteen hundred others, according to Bulletin 91 of the National Research Council issued in 1933, belong in the Industrial Group. Especial mention should be made of the great pharmaceutical research organizations of Parke, Davis & Company, Eli Lilly & Company and others. Research organizations on a somewhat lesser scale are important in many of the pharmaceutical manufacturing houses, including many firms producing proprietary medicines only.

Parke, Davis & Company began research on Cascara in 1877. In 1885 the firm sent Dr. H. H. Rusby on an extensive trip into South America to obtain scientific information about new plants and samples of them for investigation. In 1879 the first work was done on the chemical assay for the standardization of drugs. The first development of biological and physiological work was begun in 1894 and in 1902 the first separate large building was erected to house the biological and scientific work. The present research personnel includes about eighty people working in twenty-eight divisions of the work.

5. The National Canners Association, the American Institute of Baking, the Portland Cement Association and other industrial associations maintain coöperative research laboratories.

6. The Mellon Institute of Industrial Research and the Battelle Memorial Institute are outstanding examples of industrial fellowship laboratories.

7. Arthur D. Little, Inc., of New York, the Miner Laboratories of Chicago, the LaWall and Harrisson Laboratories of Philadelphia and many others belong in the group of private consulting research laboratories.

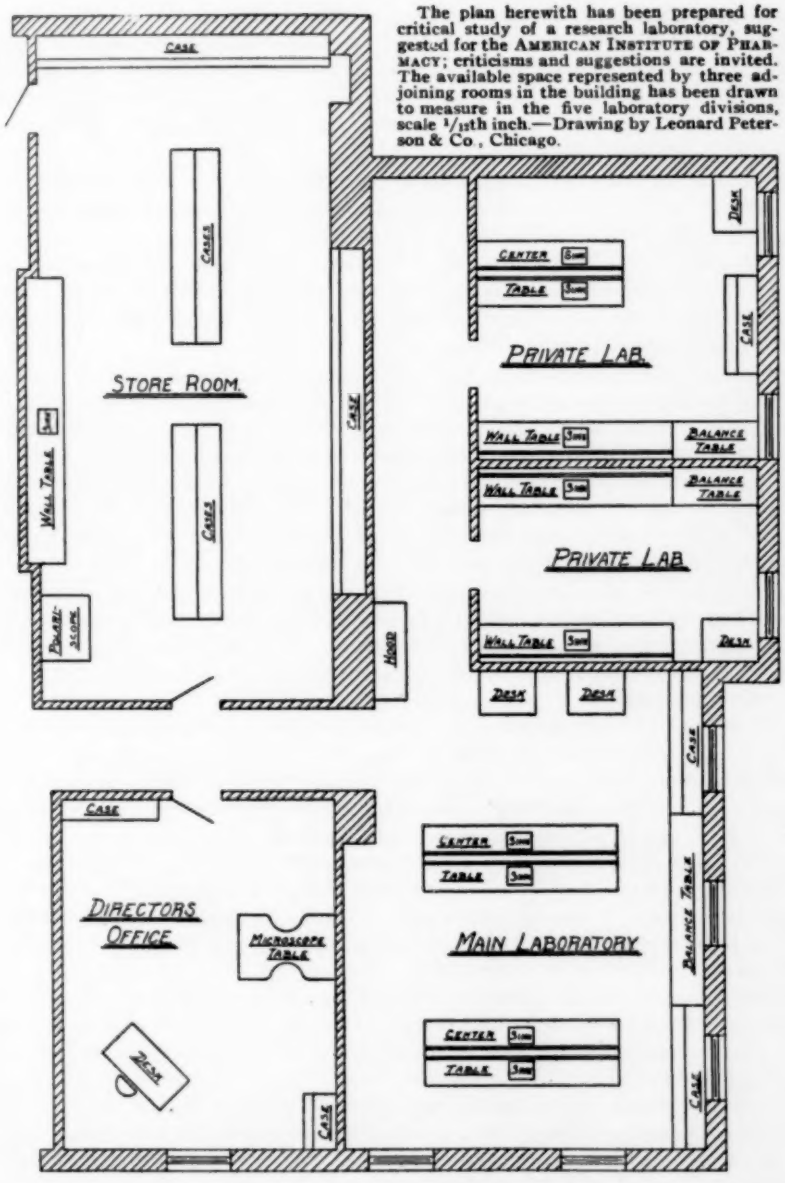
The *housing* of research is an important item from the physical standpoint, even though Boyd says, "It is not really in a laboratory that problems are solved." Charles F. Kettering has said, "They are solved in some fellow's head. . . . All the apparatus is for is to get his head turned around so that he can see the thing right." The general discussion of housing is beyond the province of this address; however, we would mention that U. S. P. and N. F. research can be located in the present AMERICAN PHARMACEUTICAL ASSOCIATION building—the INSTITUTE OF PHARMACY—in Washington. The rooms now available for laboratory purposes are ample to accommodate a laboratory with an annual maintenance cost of twenty-five thousand dollars. When research income becomes greater than this, larger quarters will be needed, though the laboratory probably never will be large enough to require a separate building of its own.

A new building to be located on the area of ground back of the present A. PH. A. building at Washington has been suggested. Such a building, suitable for housing many A. PH. A. activities will eventually be necessary, and immediate steps should be taken to obtain the land. How-

ever, a single section or wing of a building suitable for this location would be ample for a laboratory expending a hundred or two hundred thousand dollars annually.

"Senses supplemented" is the phrase used by Boyd to indicate the use of *instruments:* our physical senses are so restricted that without sense-supplementing instruments, modern research

A PROPOSED PLAN FOR A LABORATORY.



The plan herewith has been prepared for critical study of a research laboratory, suggested for the AMERICAN INSTITUTE OF PHARMACY; criticisms and suggestions are invited. The available space represented by three adjoining rooms in the building has been drawn to measure in the five laboratory divisions, scale 1/12th inch.—Drawing by Leonard Peterson & Co., Chicago.

would be impossible. We need no more than mention as aids to sight, the fluoroscope with which our very bones may be seen, the stroboscope for observing periodic motion, the spectroscope, the microscope and the telescope; as aids to hearing, the telephone, the radio and sound amplifiers that make audible infinitely faint sounds; as aids to the touch, the thermometer to detect the changes in temperature more accurately and delicately than can be done by touch, the thermopile

to estimate heat radiation, and the balance to determine the weight of objects more accurately than by "hefting" them; as aids to taste, acidimitry to determine sourness accurately and saccharimetry to determine sweetness, or the amount of sugar present; as an aid to smell, the automatic carbon monoxide "smellers" to detect the gases from auto exhausts.

As instruments and apparatus of precision and high quality are invaluable aids in research, steps are now being taken to furnish and equip the A. PH. A. Laboratory in Washington.

The *library*, so useful for "paper exploration" as Boyd terms it, is frequently the laboratory where each research project receives its first study. Certainly before any research is undertaken for publication, it is most important to know what everybody else has done in the matter. Likewise, a clearly defined conception of a problem is frequently made in the library. The library in the AMERICAN INSTITUTE OF PHARMACY will be a valuable adjunct to the A. PH. A. Laboratory and to research that is conducted there.

The *financing* of research is always a problem. It has been estimated that the annual cost of research in the United States is not less than two hundred million dollars, or one four-hundredth of the total normal income of the United States.

A. F. Woods of the U. S. Department of Agriculture has stated that the individual states and the United States together spend about thirty million dollars annually in the development of agricultural industries; this is equivalent to about one twenty-five-hundredth of their total value or one four-hundredth of their gross income.

The recent survey of the National Research Council indicates that the annual expenditure on research by the 1600 industrial organizations which maintain research laboratories is 1.3 per cent of the capital invested. This figure is very conservative. The cost of organized research in the chemical industry is estimated to be about 3 per cent of the invested capital. While the cost of research in the great pharmaceutical industrial establishments cannot be ascertained, it probably runs at least as high as in the chemical industry. The American Medical Association Laboratory, devoted largely to the research problems of the Council on Pharmacy and Chemistry, requires about ninety thousand dollars annually for its maintenance.

The combined annual income from the U. S. P. and the N. F. may be conservatively stated as more than fifty thousand dollars. Of this income, not less than one-half should be set aside for research purposes. A large part of this appropriation should go directly into the laboratory. The laboratory should also have an independent endowment that would yield not less than thirty thousand dollars annually.

The U. S. P. and N. F. research income should also provide research facilities and guidance in the A. PH. A. Laboratory to graduate students from colleges of pharmacy and other institutions, who desire to complete their practical work in research on U. S. P. and N. F. problems.

Also out of the U. S. P. and N. F. research income, partial support should be provided for research on U. S. P. and N. F. problems in the individual colleges or institutions. For instance, the valuable research on vegetable drug extraction, partially supported for three years by the A. PH. A. Research Fund at the University of Florida College of Pharmacy would have taken a sizable slice from even a fifty thousand dollar annual income, if it had been conducted entirely in the A. PH. A. Laboratory. The N. F. Research Fund now partially supports ten distinct items of research conducted in about as many colleges of pharmacy.

Even with these methods of advancing U. S. P. and N. F. research, it cannot be properly accomplished in a single laboratory. This research must be very largely of a coöperative, collaborative or referee character, and must be supported in a collaborative way by the colleges of pharmacy and the pharmaceutical industrial institutions.

The preparation and standardization of Reference Cod Liver Oil is a fine example. The U. S. P. Revision Committee arranged for a vessel and crew to catch the fish and carefully separate the livers under almost aseptic conditions. These livers were then brought into the E. L. Patch Company factory, which had been thoroughly cleaned, cleared of all cod livers and cod liver oil, and rented by the Committee for several days. With great heed to cleanliness, the oil was extracted, clarified and bottled in ounces under nitrogen gas. About twenty laboratories collaborated in the vitamin assay of this oil at a cost approximating one thousand dollars each. The production of the oil cost seven thousand dollars. It is now being distributed as a reference standard to laboratories throughout the world.

Such extensive and valuable researches as are now being advanced by the U. S. P. Revision Committee on the vitamin assays, the digitalis and ergot assays, and the standardization of products from anemia could never be satisfactorily completed in a single laboratory nor be financed exclusively by the U. S. P. and N. F. organizations.

As in the past revisions, the recent revisions of the U. S. P. and N. F. have drawn upon the research accomplishments published in the literature pertaining to pharmacy, medicine, chemistry, botany and other allied fields. It is essential for the proper growth of the Pharmacopœia and the Formulary that this literature should be constantly reviewed with the single thought of utilizing the new methods of drug standardization that are presented. On the other hand the Pharmacopœia and the Formulary should return the favor with a rich research literature of their own.

The *personnel* of the research laboratory, in connection with any institution, should be headed by a director of both executive ability and scientific training. The director should have associated with him a few persons of varied scientific training who have originality, vision and the courage of the true pioneer. This small group should be supplemented by suitable assistants and routine workers. Two-thirds to three-quarters of the cost of research is in salaries.

Arthur D. Little says that our up-to-date explorers are "those having the simplicity to wonder, the ability to question, the power to generalize, the capacity to apply." Among pioneers, youth has always been prominent. Therefore, perhaps one of the really desirable qualifications for the experimenter in the research laboratory is youth. A list of the discoveries by men who had not reached the age of thirty is most astounding. The staffs of the research laboratories of to-day consist largely of young men and women; this is true because of the qualities of youth for such work and because the price of youth is not high, relative to the quality of service it can render.

Among other qualities of the true experimenter, Boyd lists as chapter heads the following: Curiosity, Imagination, Experimentalism, Enthusiasm, Patience, Persistence, Faith, Courage, Common Sense, Honesty and Modesty.

ACHIEVEMENTS OF THE PAST.

The accumulated knowledge of the human race represents the achievements of research. Perhaps it is not quite fair to say that all knowledge is entirely due to research. It is true that rather frequently new knowledge is developed or new discoveries made without definitely controlled experimentation. "Accident" and "luck" are often mentioned in connection with research, but it is worthy of note that the "accident" usually happens, or the "luck" comes, to the person who has studied and thought and experimented.

In connection with the U. S. Pharmacopœia, it is only necessary to compare the first Pharmacopœia, that of 1820, with the most recent Pharmacopœia, that of 1936, to note the vast changes, enlargements and improvements due to research. In the first Pharmacopœia, we find the crude drugs and chemicals listed by name. The only information given in connection with the 235 plant drugs is the part of the plant that constitutes the drug and the name of the plant that yields the drug. Forty-six of the chemical drugs are named only, except that three of the acids have specific gravity figures. Sixty-five items that would now be classed as chemicals are in the section of the book devoted to preparations, and directions are given for their manufacture, but no standards to determine quality and purity are given. In the most recent Pharmacopœia the vegetable drugs are scientifically described both macroscopically and microscopically, and in powdered form. Standards as to water content, ash yield and percentage of active constituent are frequently given. Many tests and assays to determine the identity, quality and purity of the drug are included in the chemical drug monographs.

Chairman Cook says, "It is no exaggeration to say that within the covers of the Pharmacopœia (U. S. P. XI) there are hundreds of thousands of factual statements, every one of which is expected to be correct. Many of these combine to make up the enormous number of tests which prove the identity and purity of official products. These tests and assays have been evolved through many decades and are often accepted as theoretically correct from one Pharmacopœia to another, simply because no occasion has arisen to subject them to the 'acid test' of a case in court."

PROSPECTS FOR THE FUTURE.

No one dare say that human knowledge in any line has reached its ultimate limit, or that anything has attained perfection. Every scientist realizes that in his own particular specialized

field the known is but a small island in an illimitable ocean of the unknown. Professor Frank R. Lilly of the University of Chicago, in his address at the semi-centennial of Sigma Xi, says: "It is at least arguable, certainly in biology, that the progress of research creates more problems than it solves; that the faculty of imagination, which is at the bottom of all creative research, is not satisfied with its diet of results, but is on the contrary stimulating new growth. Thus while we can clearly perceive that we are mere beginners, there is no way of anticipating the future of research nor the evolution of human intelligence."

When we look at U. S. Pharmacopœia XI and National Formulary VI, they do appear to be very fine books. Certainly we have put into them the best that we had. However, when we note the volume of criticisms calling attention to the "errors" in the books, our pride hasteneth to a fall.

We know not what the future holds for the Pharmacopœia and the Formulary, but the sign-posts definitely point to at least three well-defined issues of the immediate future, *viz.:*

First.—Revision will be necessary and will continue at a greatly accelerated pace.

Second.—Revision now demands intensive well-organized research. This research covers essentially the same fields for both the Pharmacopœia and the Formulary. There is no reason why U. S. P. research should be separated from N. F. research.

Third.—There should be a marked difference in the scopes of the two books. The Pharmacopœia should standardize the "simples," *i. e.*, the plant, animal and chemical drugs; the Formulary should standardize the required preparations of the drugs official in the Pharmacopœia. The great advantages of this arrangement to the Pharmacopœia would be that it would then control the simple therapeutic agents required and used in medical practice and that the Revision Committee could concentrate on the standardization of those agents most amenable to strictly scientific control. Such an arrangement would give the Formulary a sound therapeutic foundation, and enable its revisers to concentrate on the standardization of the preparations. It would give each book a distinctive sphere, would remove any cause for conflict, and would bring about greater efficiency.

REBATE TO LOCAL BRANCHES.

In *Bulletin No. 4*, A. PH. A., secretary E. F. Kelly has advised Local Branches that at the meeting of the Council in Dallas, the following action was taken with respect to the rebate to the Local Branches of a portion of the annual dues of ASSOCIATION members:

"The Secretary brought up for consideration the proposal to rebate to the Local Branches a part of the annual dues paid each year by members of the A. PH. A. who are also members of the Local Branches, as proposed in a resolution submitted by the New York Branch last year. This proposal is intended to replace the present rebate to the Local Branches of one dollar per new member of the ASSOCIATION secured by the Local Branches, to relieve the Branches of the necessity of asking dues-paid members for an additional contribution to the expenses of the Branch, to give the Branches funds with which to operate, and to secure their support in the collection of dues as well as in securing new members.

It is requested that the secretary of each Local Branch forward a list of the active members of the Branch in order that these can be checked against the ASSOCIATION membership list. It will be helpful if each secretary will also indicate the territory the Branch is supposed to cover.

The Northern New Jersey Branch has again offered a membership banner for the Local or Student Branch which shows the greatest percentage gain in membership during the present ASSOCIATION year. The banner for 1935–1936 was won by the State College of Washington Student Branch.

The splendid coöperation which the Local Branches have given the ASSOCIATION is deeply appreciated, and it is hoped that the rebate will be of assistance to them in carrying on their good work for pharmacy.

KAPPA PSI.

The Pittsburgh Graduate Chapter of Kappa Psi Pharmaceutical Fraternity held its monthly meeting in the private dining room of Child's Restaurant, Fifth Avenue and Smithfield Street, Pittsburgh, Pa., October 15th.—F. J. STEELE, *Historian.*

ASSOCIATION BUSINESS

THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1936–1937.

Office of the Secretary, 2215 Constitution Ave., Washington, D. C.

LETTER NO. 2.

September 12, 1936.

To the Members of the Council:

For the information of the new members of the Council, it is pointed out that motions made by mail in the interim between meetings of the Council require no second.

20. Minutes of the First Meeting of the Council. The minutes will be sent to the members of the Council later in the form of page proof, as set up for printing in the JOURNAL.

21. Joint Meeting, Executive Committee, N. A. R. D. and Council, A. Ph. A. (See Council Letter No. 1, Item 16.) Secretary Dargavel advises that arrangements have been made to hold this meeting in the Venetian Room, Club Floor, Hotel William Penn, Pittsburgh, Pa., on Monday, September 21st, beginning at 9:30 A.M. All members of the Council who will attend the N. A. R. D. convention are requested to be present at the Joint Meeting.

22. Applicants for Membership. The following applications, properly endorsed and accompanied with the first year's dues, have been received:

No. 1, A. E. Witt, 5918 So. Western Ave., Los Angeles, Calif.; No. 2, D. V. Ellsworth, 600 Euclid Arcade, Cleveland, Ohio; No. 3, George Menendez, 3011 Lafayette Ave., E. Bronx, N. Y. C.; No. 4, Meyer Klein, 5248 25th St., Detroit, Mich.; No. 5, Paul Deloss Brown, Methodist Hospital, Indianapolis, Ind.; No. 6, Dellas Vega Dahlin, 28 Crescent St., Middletown, Conn.; No. 7, Lydia K. Witte, 515 Morales St., San Antonio, Texas; No. 8, Eldredge E. Barnett, 45 W. Sherwood Ave., Phoebus, Va.; No. 9, Sister Editha, 380 Henry St., Brooklyn, N. Y.; No. 10, Evelyn Helmsdorff, 83 Dyer Ave., Milton, Mass.; No. 11, Howard A. Pringle, 16 Deaconess Rd., Boston, Mass.; No. 12, David F. Dickson, 209 Langley Rd., Newton Centre, Mass.; No. 13, Mitchell Stoklosa, 16 Deaconess Rd., Boston, Mass.

(*Motion No. 1*) Vote on applications for membership in the AMERICAN PHARMACEUTICAL ASSOCIATION.

E. F. KELLY, *Secretary.*

LETTER NO. 3.

October 27, 1936.

To the Members of the Council:

23. Minutes of the First Meeting of the Council.

(*Motion No. 2*) It is moved by Eberle that the minutes of the First Meeting of the Council be approved.

24. Joint Meeting Executive Committee, N. A. R. D. and Council, A. Ph. A. This meeting was held on Monday forenoon, September 21st, with the following members of the Council present: Geo. D. Beal, S. L. Hilton, H. C. Christensen, Roy B. Cook, R. P. Fischelis, R. L. Swain and E. F. Kelly.

The resolutions adopted at the A. PH. A. meeting were reviewed and several of them were later adopted by the N. A. R. D. The N. A. R. D. discontinued its Committee on Pharmacy Week in accordance with the agreement previously reached and changed the name of its Committee on U. S. P. and N. F. Propaganda to Committee on Professional Relations.

It was decided to continue the A. PH. A.-N. A. R. D. Joint Committee and several matters of mutual interest were referred to this Committee for further consideration.

25. Use of Text of N. F. VI. The following communication has been received from Chairman DuMez of the Committee on Publications:

> "With reference to Professor Snow's request of August 20th, it is recommended that he be given permission to use portions of the text of the National Formulary VI in the revised edition of his book entitled 'Essentials of Pharmacy.'

"I make this recommendation in view of the fact that Professor Snow was given permission to use the text of the N. F. V and that the text of the N. F. VI will be used in the same way and to approximately the same extent."

(*Motion No. 3*) It is moved by DuMez that Professor Clyde M. Snow be given permission to use portions of the text of the N. F. VI in the forthcoming revision of his textbook "Essentials of Pharmacy" with the customary acknowledgment and the usual fee of $5.00.

26. Applicants for Membership. The following applications, properly endorsed and accompanied with the first year's dues, have been received:

No. 14, Sanford Kornfield, 3105 Webster St., Oakland, Calif.; No. 15, Charles Rogers, 2910 Ditmars Ave., Astoria, N. Y.; No. 16, Kenneth L. Howell, 1640 W. Adams St., Chicago, Ill.; No. 17, George W. Lloyd, Spencer, S. Dak.; No. 18, Edward Christian Thompson, 603 11th Ave., Brookings, S. Dak.; No. 19, Richard Anthony Deno, Medical College of Va., Richmond, Va.; No. 20, Jacob Osterweil, 16 Elliot Place, Bronx, N. Y. C.; No. 21, Eugene L. Sbarbaro, 860 Ashbury St., San Francisco, Calif.; No. 22, Dorothy L. Prather, 1355 Willard St., San Francisco, Calif.; No. 23, Sidney Sussman, 3601 Park Heights Ave., Baltimore, Md.; No. 24, Frank J. LaBarbera, Jr., 532 9th St., Brooklyn, N. Y.; No. 25, A. D. Catterson, Jr., 1067 So. Gilpin St., Denver, Colo.; No. 26, Louis J. Fischl, 2960 College Ave., Berkeley, Calif.; No. 27, Timothy Donald Perkins, 820 W. Washington, San Diego, Calif.; No. 28, Carlo Basch, 200 Ellis St., San Francisco, Calif.; No. 29, Warner James, 219 Duffield St., Brooklyn, N. Y.; No. 30, Sik Chu Lui, 1104 Packard St., Ann Arbor, Mich.; No. 31, Leon A. Gauthier, Medical Dept., Quantico, Va.; No. 32, Norman Sollenberger, 212 Lantwyn Lane, Narberth, Pa.; No. 33, Alton Francis Reichgert, 100 So. High St., West Chester, Pa.; No. 34, Lyman N. Hoag, 4334 Arlington Ave., Los Angeles, Calif.; No. 35, Sister M. Rosalia, 2200 Hayes, San Francisco, Calif.; No. 36, John J. Kairis, Calvert & 33rd Sts., Baltimore, Md.; No. 37, Sister Mary Celsus, 745 W. Houston, San Antonio, Texas; No. 38, Sister Eugenia Mary Dubuc, South Prospect St., Burlington, Vt.; No. 39, Agnes Regina Swoboda, 2325 E. Grand Blvd., Detroit, Mich.; No. 40, Paul D. Zettlemoyer, 440 Tilghman St., Allentown, Penna.; No. 41, M. Lemmermeyer, 15 E. 30th St., New York, N. Y.; No. 42, C. F. Koch, 175 Ridge Ave., Lawrenceburg, Ind.; No. 43, Francis Williams Howes, 6018 S. Artesian Ave., Chicago, Ill.

(*Motion No. 4*) Vote on applications for membership in the AMERICAN PHARMACEUTICAL ASSOCIATION.

A vote is also called for on Motion No. 1 (see Council Letter No. 2).

E. F. KELLY, *Secretary.*

LETTER NO. 4.

November 5, 1936.

To the Members of the Council:

27. Election of Members. Motions Nos. 1 and 4 (see Council Letters No. 2, page 1037 and No. 3, 1038) have been carried and applicants numbered 1 to 43, inclusive, are declared elected.

28. Minutes of the First Meeting of the Council. Motion No. 2 (Council Letter No. 3, preceding) has been carried and the minutes are approved.

29. Use of Text of N. F. VI. Motion No. 3 (Council Letter No. 3, preceding) has been carried and Professor Snow has been advised.

30. Appointment of Committees, etc. President Beal has made the following appointments (see Council Letter No. 1, Item 13):

Committee on the Study of Pharmacy—R. P. Fischelis, *Chairman;* E. F. Kelly, R. A. Lyman, F. A. Delgado, Harvey A. Whitney.

Committee on Cosmetics—H. C. Muldoon, *Chairman;* A. G. DuMez, R. E. Terry, Bernard Fantus, M. G. de Nevarre, F. W. Nitardy.

Committee on Local Branches—Adolph Ziefle, *Chairman;* R. S. Fuqua, Baltimore; L. Templeton, Chicago; H. T. F. Givens, New York; N. T. Chamberlin, Cleveland; F. S. McGinnis, Pittsburgh; H. J. Donnell, Portland, Ore.; Elsie H. Bennetts, San Francisco; Masaru Masuoka, Los Angeles; R. G. Goedhart, Gainesville; Belle Wenz, Pullman, Wash.; Joe Black, Louisville; J. M. Longmire, University, Miss.; C. V. Netz, Minneapolis.

Board of Canvassers—Edward Spease, *Chairman;* F. J. Bacon, E. D. Davy.

Committee on Legislation—E. F. Kelly, *Chairman;* R. P. Fischelis, S. L. Hilton, R. L. Swain, Rowland Jones.

Committee on U. S. Pharmacopœia—E. H. Wirth, Chicago, *vice* Reid Hunt (term expires 1946).

Committee on Pharmaceutical Syllabus—R. A. Lyman, reappointed. Term expires 1943.

Committee on Pharmacy Week—Action on this committee is to be deferred.

Committee on Horticultural Nomenclature—H. W. Youngken, *Chairman;* C. W. Ballard, E. N. Gathercoal.

Committee on Physiological Testing—James C. Munch, *Chairman;* Wm. T. McCloskey, L. W. Rowe, C. A. Morrell, E. E. Swanson, M. R. Thompson, H. B. Haag.

Committee on Weights and Measures—M. N. Ford, *Chairman;* R. P. Fischelis, W. Mac Childs, A. C. Taylor, Arthur D. Baker and the Ex-Officio Chairmen.

Committee on Wm. Procter, Jr. Memorial Fund—James E. Hancock, *Chairman;* A. R. L. Dohme, B. T. Fairchild, E. G. Eberle, D. M. R. Culbreth, Henry T. Hopkins, W. B. Day, Ivor Griffith, J. K. Lilly, Charles G. Merrell, José P. Alacan, C. H. Packard, R. L. Quigley.

Committee on International Pharmaceutical Nomenclature—A. G. DuMez, *Chairman;* Otto Raubenheimer, H. W. Youngken, Arno Viehoever, Horatio C. Wood.

Committee on Lay Press Relations—R. W. Rodman, *Chairman;* H. C. Christensen, W. A. Hamor, E. F. Kelly, Ernest Little, J. C. Munch, R. L. Swain.

Committee to Coöperate with Committees from the A. A. C. P. and N. A. B. P. to Obtain Prerequisite Legislation—Ernest Little, *Chairman;* W. B. Day, Carl G. A. Harring, H. E. Kendig.

Committee on Endowment Fund—Wm. B. Day, *Chairman;* C. O. Bigelow, Theo. J. Bradley, F. W. Sultan, F. J. Wulling.

The American Institute of Pharmacy Maintenance Committee—H. A. B. Dunning, *Chairman;* E. F. Kelly, R. L. Swain, S. L. Hilton, R. P. Fischelis.

Committee on Pharmacists in the Government Service—H. E. Kendig, *Chairman;* B. Tappan Fairchild, F. L. McCartney. Also three each to be appointed by the N. A. B. P. and A. A. C. P.

Committee on Transportation—No changes.

International Pharmaceutical Federation—Delegates: E. Fullerton Cook, E. N. Gathercoal, E. F. Kelly. Reporters: E. G. Eberle, Otto Raubenheimer, J. C. Krantz, Jr.

American Association for the Advancement of Science—Councilors: J. C. Krantz, Jr., A. F. Schlichting.

National Drug Trade Conference—Delgates: J. H. Beal (1 year), R. P. Fischelis (2 years), E. F. Kelly (3 years).

Committee on Prescription Tolerances—W. J. Husa, *Chairman;* F. L. Black, R. E. Terry, S. L. Hilton, L. A. Brown, W. F. Gidley, Marvin J. Andrews.

Committee on the Modernization of Pharmacy Laws—R. L. Swain, *Chairman;* H. C. Christensen, R. P. Fischelis, R. C. Wilson, J. Lester Hayman, Arthur D. Baker, Henry V. DeHaven.

Committee on Professional Relations—Leonard A. Seltzer, *Chairman;* C. B. Jordan, Geo. M. Beringer, K. B. Bowerman, R. T. Lakey.

Committee on Council on Pharmaceutical Practice—E. Fullerton Cook, *Chairman;* H. V. Arny, P. H. Costello, E. N. Gathercoal, R. R. Gaw, C. B. Jordan, E. F. Kelly, Edward Spease, R. L. Swain.

Committee to Study By-Laws—R. L. Swain, *Chairman;* Wm. B. Day, J. H. Beal, R. P. Fischelis, E. F. Kelly.

Committee to Study Courses in the History of Pharmacy—C. O. Lee, *Chairman;* E. J. Ireland, Loyd Harris.

National Committee on Professional Information Pertaining to Dental Pharmacy—Geo. C. Schicks, *Chairman;* A. O. Mickelsen, R. W. Clark, A. R. Bliss, Ralph E. Terry.

General Membership Committee—The President and Secretary wish to consider further the personnel of this committee.

31. Applicants for Membership. The following applications, properly endorsed and accompanied with the first year's dues, have been received:

No. 44, Tokashi Kondo, Box 293, Pullman, Wash.; No. 45, Johnny Y. Furuta, Box 293, Pullman, Wash.; No. 46, Robert Picken, 1701 B St., Pullman, Wash.; No. 47, Creta Kidder, 704 Campus St., Pullman, Wash.; No. 48, Emil Banich, Box 717, Pullman, Wash.; No. 49, Marian

O'Brien, Box 874, Pullman, Wash.; No. 50, Helen Vogler, 1607 Ruby St., Pullman, Wash.; No. 51, Mary Jane VanDorn, 702 Colorado St., Pullman, Wash.; No. 52, F. A. Fetsch, 7702 Santa Monica Blvd., Hollywood, Calif.; No. 53, Otto Moosbrugger, 650 N. Main St., Dayton, Ohio; No. 54, Norbert A. Heichelbech, 1118 Mulberry St., Louisville, Ky.; No. 55, Randolph N. Smith, 504 Gaston Apt., Louisville, Ky.; No. 56, Josephine Nichols, 172 Main St., Winona, Minn.; No. 57, Ibert Mellan, 524 Spruce, Philadelphia, Penna.; No. 58, Harry G. Russell, P. O. Box 531, University, Miss.; No. 59, Everette E. Eaton, Box 253, University, Miss.; No. 60, Wm. D. Jones, Box 599, University, Miss.

(*Motion No. 5*) Vote on applications for membership in the AMERICAN PHARMACEUTICAL ASSOCIATION.

E. F. KELLY, *Secretary*.

COMMITTEE REPORTS

REPORT OF COMMITTEE ON STUDY OF PHARMACY.

BY ROBERT P. FISCHELIS.

The specific duty imposed upon this Committee at our last convention is contained in Recommendation No. 12 of the Report of the Committee on Resolutions. It reads as follows:

RECOMMENDATION NO. 12.

> It is recommended that the committee on study of pharmacy be instructed to explore the possibilities of extension courses for practicing pharmacists to the end that formal lectures and demonstrations in connection with newer materia medica may be arranged at suitable points and that such instruction be confined to fundamental scientific progress in the field rather than to commercial preparations.—*Approved.*

In seeking to carry out this recommendation, letters were addressed to the Colleges of Pharmacy asking them to inform the Committee whether any special classes had been organized for graduates or whether any review courses in contemporary pharmacy had been given. Twenty-six colleges replied that no effort had been made in this direction. Fifteen colleges replied that no courses had been given but that the subject was receiving consideration. Three colleges indicated that review courses had been made available to their graduates who were preparing for Board examinations. Fifteen colleges reported some activity in this field actually under way. The direction in which this activity has been developed in these institutions is of interest.

In several cases the college faculty is contributing to the organization of U. S. P. and N. F. exhibits and supplying literature to state medical and pharmaceutical publications, thus providing a type of extension education which, while not formally organized is nevertheless an initial step in the right direction.

In this connection it is interesting to observe the special course on prescription writing for physicians given during the month of April at the Brooklyn College of Pharmacy. Dr. Frederick Schroeder, who is both a physician and pharmacist, gave the course and a total of 160 physicians were enrolled with an average attendance of 120. No charge was made for the course. As a result of this course the same teacher has been engaged to give a similar course at the Long Island Medical College.

Wayne University has for two years been giving a night course in materia medica, pharmacy and pharmaceutical chemistry. These courses are not given for college credits and it is contemplated to organize a series of lectures and demonstrations for pharmacists on the new U. S. P. and N. F.

Some schools have used the local branches of the AMERICAN PHARMACEUTICAL ASSOCIATION and State Pharmaceutical Association meetings as media for disseminating information on contemporary pharmacy. The faculty members of these colleges supply the scientific program.

A letter from Dean Wulling of Minnesota on this subject summarizes the variety of services

offered by Colleges of Pharmacy in this field, exclusive of the more formal programs which have been developed in some institutions. An extract from the letter follows:

1. As long ago as 1894 we gave annually six or eight lectures to pharmacists on matters helpful in keeping them up-to-date.
2. Eight or nine years later we established the Scientific and Practical Section of the State Association which has been under my chairmanship ever since and whose programs the College has always had in hand. The sessions of this Section have been generally looked upon as graduate work in pharmacy.
3. We have also done some work in extending the work of the College at the many district meetings held by pharmacists throughout the state annually.
4. Another of our activities that may be looked upon in the light of College extension has been the numerous pharmaceutical exhibits we have held at pharmaceutical, medical and dental conventions. At these exhibits we usually give demonstrations. Many pharmacists as well as physicians and dentists visit these exhibits.
5. We have many special lectures during the year by specialists in their respective fields to which we invite pharmacists.
6. Our departmental library is open to pharmacists and often we give them library service personally and by mail.
7. We keep pharmacists informed on medicinal plant culture by giving them opportunities to visit our medicinal plant garden and system of six plant laboratories.
8. We occasionally invite pharmacists to attend the demonstrations in our work on Digitalis standardization on cats and frogs and of our ergot with roosters.
9. Our Dispensing Department gives real service to many pharmacists who inquire of us about difficult prescriptions, incompatibilities, etc.
10. Personally I have been called upon frequently to give lectures on pharmaceutical subjects of interest to physicians. Sometimes these invitations come through physicians and sometimes through pharmacists and several times through our University Extension Division. I gave about one-half dozen lectures to the Hennepin County Medical Society in Minneapolis, one to the Ramsey County Medical Society in St. Paul and to other medical bodies in Duluth, Hibbing, Alexandria, Fergus Falls, Hutchinson, Albert Lea, Rochester, Owatonna, Fargo, Marshall, LaCrosse, Madison, etc. This work with physicians has been particularly effective.
11. The College has been the first impetus back of our Interprofessional Relations Committee work which we started here in the Twin Cities and which then became state-wide.
12. One of our very important and effective Extension Division's work was the radio talks I gave to pharmacists and to the public at large. So far I have given over fifty such broadcasts. They brought many responses and I am particularly well satisfied with that sort of work.

For some years the University of Michigan has held an annual Pharmacy Conference to which the pharmacists of the state have been invited. A program balanced between scientific and economic subjects is presented. The 1936 program, for example, included the following topics:

"Pharmaceutical Research, a Prerequisite to Pharmacopœial Revision"—Dr. George D. Beal, President-Elect of the AMERICAN PHARMACEUTICAL ASSOCIATION and Assistant Director of the Mellon Institute for Industrial Research of Pittsburgh.

"Economics and War"—Dr. Max S. Handman, Professor of Economics, University of Michigan.

"Anesthesia and Anesthetics"—Dr. Frederick A. Coller, Professor of Surgery and Chief of the Surgical Staff, University Hospital, University of Michigan.

Purdue University's annual two-day Business Conference has become an occasion to be looked forward to by the pharmacists of Indiana. Although entitled "Business Conference" its program is both professional and economic in its content. As an example of the ground covered at these annual conferences the following topics culled from the 1936 program may be cited:

"Re-entering the Drug Business"—Dean R. C. Wilson, University of Georgia.
"What Shall We Do about It?"—G. Barret Moxley, President, Kiefer Stewart Co.
"Marihuana"—C. J. Zufall, Purdue University.

"Economic Panaceas"—Dr. J. A. Estey, Economist, Purdue University.

"What Price Liberty"—John J. Haramy, attorney, lecturer and author.

"Service Jobbers *vs.* Mutuals"—Gary Drug Club.

"New Competition"—Lafayette Drug Club, representatives of other local drug clubs will present topics of importance to all druggists.

"Socialized Medicine"—Dr. Morris Fishbein.

"New Lesson in Prescription Pricing"—H. L. Kendall, Purdue University.

"What Figures Reveal"—Henry W. Heine, Purdue University.

"Social Security Legislation"—Hon. Jos. A. Andrew, legislator.

"News from the Front"—H. C. Christensen, Secretary, National Association Boards Pharmacy.

"The Pharmacist and the Dentist"—Dean Henshaw and Dr. Timmons, Indiana School of Dentistry.

"The Pharmacist and the Doctor"—Dean Edw. Spease, Western Reserve University.

"The New U. S. Pharmacopœia"—Dean C. B. Jordan.

"The New National Formulary"—Prof. E. N. Gathercoal.

"Medical Fads and Superstitions"—Dr. Howard W. Haggard, Yale University.

The Alabama Polytechnic Institute and the Philadelphia College of Pharmacy and Science conducted one-day programs for the pharmacists of their respective localities. The Alabama program included:

"Public Health in Alabama"—Dr. Douglas L. Cannon, Alabama State Board of Health.

"Prescription Packaging—Its Importance"—Chick Praham, Director of Promotion and Advertising, Drug Package, Inc.

"Problems of the Retail Pharmacist"—Round Table Discussion.

"Lessons from St. Louis Drug Survey"—Frank A. Delgado.

"Store Management and Merchandizing"—Sinclair Jacobs, President Jacobs Pharmacies, Inc.

The Philadelphia program included:

"The Newer Chemical Aspects of the Pharmacopœia"—Dr. Arthur Osol Director of the Chemical Laboratories.

"Official Biological Products and the Official Preparations for Parenteral Administration"—Prof. Louis Gershenfeld, Professor of Bacteriology and Hygiene.

"Official Requirements for Vegetable and Animal Drugs"—Dr. Marin S. Dunn, Director of the Biological Laboratories.

"Biological Methods for Standardizing Cathartics—Dr. Arno Viehoever, Research Professor in Biology.

"The Pharmacy of the U. S. P."—Prof. Ivor Griffith, Associate Professor in Pharmacy.

"New Developments in the Products for the Treatment of Pernicious Anemia"—Dr. William Bosworth Castle.

"The Advantage of Official Medicines"—Dr. H. C. Wood, Jr., Professor of Pharmacology.

"Significant Features of the New Pharmacopœia"—Prof. E. Fullerton Cook, Chairman of the U. S. P. Committee of Revision, Director of the Pharmaceutical Laboratories.

"The New National Formulary"—Prof. Adley B. Nichols, Secretary of the N. F. Committee of Revision, Assistant Professor of Operative Pharmacy.

Professor Cock writes that in addition to this program a series of popular lectures are given evenings at weekly intervals during two or three months of the year. He further states:

"We have also arranged, for next fall, to conduct a special course for graduates in the preparation of ampuls and solutions for parenteral administration. Already registrations have been received for a full class in this course. The College also has under consideration the offering of special lectures and laboratory courses in some of the newer scientific developments in pharmacy, including such subjects as colloids, hydrogen-ion concentrations, ampuls and sterile products and official assay methods. The details of this have not yet been announced. Some of our Popular Science Lectures were also planned to give new information to the pharmacists of the city. The attendance at these frequently reached 250 and some druggists came regularly. Pharmacists of the city were also invited to our two-day 'Science Day' demonstrations when new chemical,

biological and pharmaceutical processes were demonstrated. Many city pharmacists visited the College, spending hours in studying the processes."

At the Medical College of Virginia a two-day symposium was given in 1936 with the following program:

"What the Pharmacist Should Know about Vitamins"—Dr. Sidney S. Negus.
"Certain Recent Advances in the Standardization of Medicinal Products"—Part I—Dr. W. G. Crockett.
"Biological Products"—Dr. E. C. L. Miller.
"The Essentials of p_H That Pharmacists Should Know"—Dr. Sidney S. Negus.
"Certain Recent Advances in the Standardization of Medicinal Products"—Part II—Dr. W. G. Crockett.
"Dangers Incident to the Use of Certain Popular Drugs"—Dr. H. B. Haag.

Perhaps the most comprehensive of these extension courses given during the past year was that of the University of Florida. The program occupied three days and included the following:

"Why a Short Course for Pharmacists"—Mr. Christensen.
"Window Decorating"—Mr. Ireland.
"The Art of Pharmacy"—Mr. Griffin.
"Economy in Drug Stock"—Mr. Rennebohm.
"Organization and Legislation"—Mr. Rennebohm.
"Advertising"—Mr. Ireland.
"The Professional Pharmacist"—Mr. Griffin.
"Economy in Drug Stock"—Mr. Rennebohm.
"Changes in the New Edition of the U. S. Pharmacopœia which Affect the Retail Pharmacist"—Mr. Husa.
"Adjuncts to the Professional Pharmacy"—Mr. Griffin.
"Drugs, Old and New"—Mr. Foote.
"Narcotic Drug Laws"—Mr. Bransky.
"Drugs, Old and New"—Mr. Foote.
"Biologicals"—Mr. Bassett.
"Changes in the New Edition of the National Formulary which Affect the Retail Pharmacist"—Mr. Husa.
"Narcotic Drug Laws"—Mr. Bransky.
"Biologicals"—Mr. Bassett.

Loyola University and South Dakota State College contemplate work along this line in the coming year. Dean McCloskey of Loyola states:

"Day demonstrations during the annual convention of the State Association. Among these will be Methods of Packaging; Dermatological Prescriptions; the newer semi-proprietaries in conjunction with the official substances; the new additions to the U. S. P. and N. F.
"A 6 weeks' course of 1 or 2 nights a week devoted to lecture and demonstration and laboratory work on the advanced work in pharmacy and according to the problems presented.
"We contemplate a fee based on materials cost only, to be prorated among those attending, at the end of the course."

Dean Serles of the Division of Pharmacy of South Dakota State College states:

"I have definitely contemplated and partially organized a two weeks' clinic for graduate pharmacists but due to shortage of funds could not put it into operation this year. It is my intention to develop such a clinic this next year for the purpose of trying out its advantages and assisting the men in actual practice to keep up with the newer ideas in the various fields in which they are engaged."

It is gratifying to note the response of some Colleges of Pharmacy to the needs of the pharmacist in practice. There is a considerable gap in the training and preparation of pharmacists

now in practice and those who are being graduated to-day. This is due to the rapid rise in standards in the very recent past. The bridging of this gap is a part of our responsibility to the profession and the public, and extension education activities should therefore be encouraged. Many colleges complain that their efforts to provide review courses or "clinics" have not met with a favorable response in the past. It is therefore pleasing to note that the demand for such supplementary education is coming in increasing volume from pharmacists and pharmaceutical associations themselves.

The recent revision of the U. S. P. and N. F. offer a splendid opportunity to the colleges for organizing short courses for graduates in connection with other activities that may bring these graduates to the college at some specified time during the year.

REPORT OF THE COMMITTEE ON LOCAL BRANCHES.*

BY ADOLPH ZIEFLE, *Chairman.*

A study of the proceedings of Local Branches and Student Branches as published in the JOURNAL and the reports of the secretaries indicate a year of unusual activity and material aid to the ASSOCIATION. With few exceptions, the Branches have held regular meetings and the report of their proceedings is one of the most interesting sections in the JOURNAL.

As a rule the most successful branches are located in areas where enthusiastic officers and members are willing to do the work necessary to maintain a successful branch. The success of any organization depends on the sense of responsibility of its officers. Members of the ASSOCIATION should meet oftener than once each year in the interest of professional pharmacy, and Local Branches and Student Branches serve as the best medium for this contact. It is becoming increasingly evident that the commercial development of the drug store has not brought the promised returns. The future lies in the development of the professional phases of pharmacy.

Local Branches and Student Branches are under the supervision of the Council. The duty of the Committee on Local Branches is to assist in establishing new branches and to render a service to established branches. Only branches in good standing should be listed in the JOURNAL.

As the secretary of each branch is required to submit minutes of meetings for publication in the JOURNAL, the Committee did not ask for reports on the activities of the year. A résumé of the activities of all branches would make this report too long.

As branches are the best medium of promoting professional pharmacy and for increasing membership in the ASSOCIATION, establishing new branches and contacting established branches should be one of the major activities of the president. Reports from certain areas where branches should be established indicate that very little progress can be made by correspondence. It will require a personal visit of the president or his duly appointed representative. Much of the success of branches throughout the current year and especially the establishment of new Student Branches is due to the outstanding service of Secretary Kelly who gave first consideration to requests for information from the branches.

Rebates.—The resolution of the New York Branch and the Committee on Local Branches regarding rebates to Local Branches was favorably considered at the Portland convention. Throughout the current year all officers of existing branches, of certain inactive branches, and prospective new branches report that the granting of a rebate of 50 cents (or $1.00) would materially affect the status of their branches. The Committee believes that the Council is justified in granting whatever rebate is deemed advisable. If Student Branches whose activities are not so restricted as Local Branches receive a rebate of $2.00 a member, members of Local Branches should be rebated $1.00. Through this plan every member of the AMERICAN PHARMACEUTICAL ASSOCIATION would automatically become a member of a Local Branch within a radius of fifty miles of the place where he lives. This would also obviate the necessity of collecting local dues which, in some instances, is a disagreeable task. The Committee recommends that before October 1, 1936, the Council act on the question of rebates which has been under consideration for the past year. It is hoped that in the granting of rebates, many inactive Local Branches may be reëstablished.

Local Branches.—No new Local Branches were established last year. The following branches are in good standing with the ASSOCIATION: Baltimore, Chicago, Detroit, New York,

* See pages 938 and 950, October JOURNAL.

Northern New Jersey, Northern Ohio, North Pacific, Northwestern, Philadelphia and Pittsburgh.

If the North Pacific Branch of Portland, Oregon, with a membership of approximately 50 can put on five interesting programs throughout the year, a professional program at the state pharmaceutical association, sponsor a convention of the AMERICAN PHARMACEUTICAL ASSOCIATION and give $300.00 to the AMERICAN INSTITUTE OF PHARMACY from the balance left from the Portland convention fund, there is no reason why local branches should not be established in the following cities: Boston, Buffalo, Cincinnati, Columbus, Denver, Des Moines, Indianapolis, Kansas City, Lincoln, Los Angeles, Madison, Milwaukee, New Haven, New Orleans, Richmond, St. Louis, San Francisco, Seattle and Washington, D. C.

Through judicious and well-correlated activities, every pharmacist in the country should be made to realize that membership in the AMERICAN PHARMACEUTICAL ASSOCIATION and Local Branches is synonymous with high professional standing. The work of the American Chemical Society is a worthy example of such activities. For their own welfare, the chemists of the country are organization-conscious. Each member of the A. PH. A. should display his certificate of membership in the A. PH. A. along with his registered pharmacist certificate. Physicians, dentists and other professional people have a high regard for pharmacists who are interested in their professional organization.

Throughout the current year the problem of the Committee on Local Branches has been to locate members of the A. PH. A. in the areas where Branches should be established to do the work necessary to establish a Branch. We believe that a visit of the president to these areas would greatly assist the Committee in its work. The most common problem in interesting practical druggists in Local Branches is that their dues to the city association and state association are so high that they do not care to join another association. The problem of Local Branches is to interest retail pharmacists. As a beginning of the establishment of Local Branches, A. PH. A. members in certain areas should hold district meetings and discuss professional problems that are of interest to druggists.

The Committee believes that in certain areas where a strong Local Branch is maintained, there is no need for a Student Branch. Many Local Branches admit students to membership without payment of dues. Even though this plan is not conducive to a larger membership in the ASSOCIATION, at least it is a means of instructing the students in the purposes and accomplishments of the A. PH. A.

Student Branches.—Three new Student Branches were established last year, namely, at Louisville College of Pharmacy, University of Mississippi and University of Southern California. Secretary Kelly and the Committee are in contact with nine other institutions which will either establish new branches or reëstablish inactive branches.

Student Branches are formed to familiarize students with the conditions existing and the problems confronting pharmacy; to form contacts with practical pharmacists and to provide early training in organization work. The establishment of Student Auxiliaries of state pharmaceutical associations will not mean so much to students in later years as membership in a Student Branch. In the future, the ASSOCIATION must look largely to schools of pharmacy for its membership.

Supervision of Student Branches.—As the supervision of Student Branches is under the direction of the Council, all branches should be required to fulfil all the sections of their By-Laws. Student Branches are rebated $2.00 for each member, but before the rebate is made, the branch should hold as many meetings as were specified in the By-Laws, and submit a report of every meeting for publication in the JOURNAL; no project for which funds are required should be allowed except on approval of the Council; there should be a budget for the year, and an accounting at the close of the year. Unless such precautions are taken, students might not use the rebates for the purpose intended. The Committee recommends that the section regarding Student Branches be amended to be more inclusive.

To date, the Council has on file By-Laws from at least ten different Student Branches. From these By-Laws there should be formulated a standard set of By-Laws which would serve for the future.

Some of the reasons given for inability to establish Student Branches are: There is a strong Local Branch in the community; the compulsory fee bill for the higher educational institutions in the state was defeated; the members of the faculty are not interested in "student associate members," but in "student active members;" there are not enough students in attendance to establish

a branch; students do not have the funds to pay the $5.00 fee; indifference of faculty members and other reasons.

Meetings.—Reports of meetings in the JOURNAL show that some meetings are entirely too long; others discuss too many varied topics; others have a few members that do all of the talking; some of the meetings would not be interesting to retail pharmacists. It is always advisable to precede the meeting with an inexpensive dinner and with some form of entertainment. Open forum discussions were comprehensive and include various phases of pharmaceutical activity. If a branch wishes to interest a druggist in membership, he should have a personal invitation from the officers and he should be asked to give a talk or take part in a discussion.

Report of Proceedings.—A section of the By-Laws regarding Local Branches provides if within any one calendar year any Branch shall fail to hold at least three stated meetings, the proceedings of which are reported in the JOURNAL, the Branch shall be deemed to be suspended.

Before the opening of the new branch year in September or October, both Local Branches and Student Branches should be reminded of their obligation to the ASSOCIATION. The reports of proceedings of meetings would be more interesting if the various topics were segregated with appropriate headings. It is not necessary to go too much into detail. There should be a report on attendance, the secretary should keep a good set of minutes, and there should be a registration book. At the close of the year it might be appropriate for the secretary to submit an attendance report to the members.

Professional Programs at State Pharmaceutical Association Conventions.—Aside from submitting a circular letter to established branches, the Committee has not stressed participation of Local Branches and members of the AMERICAN PHARMACEUTICAL ASSOCIATION in the professional programs of conventions of state pharmaceutical associations. Without exception, the program of every state pharmaceutical association should provide for an interesting section on professional pharmacy. Last year the Committee received reports that the following Branches put on unusually successful professional programs at their state pharmaceutical association: North Pacific Local Branch, University of California Student Branch, Northwestern Local Branch, Northern New Jersey Local Branch and senior students of the University of Kansas School of Pharmacy.

The new Committee on Local Branches should make a survey of the professional programs of state pharmaceutical association conventions for 1936 as soon as possible and urge that every state pharmaceutical association have a professional program for the next and succeeding years.

REPORT OF THE COMMITTEE ON COSMETICS.*

As directed by a resolution adopted at the 1935 convention, the Committee on Cosmetics has studied "the possibility of organizing a Council on Cosmetic Preparations with functions similar to the Council on Pharmacy and Chemistry of the American Medical Association."

The question has been considered from many angles. The potential value of such a Council to the public and to pharmacists, the possible attitude of the cosmetic industry, the proposed inclusion of cosmetics in the new Food and Drugs Act, and the difficulties of making the decisions and opinions of such a Council effective to a satisfactory degree—all were given consideration. The legal liability of this ASSOCIATION for the decisions of the Council was not overlooked. Wide publicity is essential. It would be costly. The Committee was concerned at the very considerable financial outlay that this ASSOCIATION would have to make to provide well-equipped laboratories and to employ skilled workers in this field. It felt that the work of such a Council might have little influence with thousands of pharmacists throughout the nation, many of whom are not members of the AMERICAN PHARMACEUTICAL ASSOCIATION. It might have still less influence with those dealers in cosmetics who are not pharmacists.

A most important consideration in the decision of the Committee was the fact that the Council on Pharmacy and Chemistry of the American Medical Association is now considering including the examination of cosmetics in the work done by that group. A duplication of effort would be wasteful. As a consequence of its study the Committee believes that the formation of such a Council is not advisable. The decision of the Committee was unanimous.

It is conceivable that the American Medical Association and the AMERICAN PHARMACEUTICAL ASSOCIATION might join in this work. Such coöperation undoubtedly would be beneficial to both organizations. It is planned to have, within the next month, an informal conference of the

* See page 944, October JOURNAL.

President of this ASSOCIATION and the Chairman of this Committee with the Secretary of the Council on Pharmacy and Chemistry of the American Medical Association for the purpose of discussing this matter. The results of this conference will be communicated to whomever is appointed chairman of this Committee for 1937.

As a second task this Committee was directed to investigate the desirability of abstracting the literature on cosmetics for publication in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION in connection with Pharmaceutical Abstracts. The Committee considered the number and character of cosmetics publications and other publications that should be surveyed, the possible volume of worthy material, the selection of competent abstractors, and the probable cost to the ASSOCIATION. The possible value of the abstracted material to the members of this ASSOCIATION was discussed. During the past year the abstracting of chemical information pertaining to cosmetics was begun by the American Chemical Society. The possibility of other professional journals undertaking similar work was considered. As a result of its study the Committee feels that if this work of abstracting the literature of cosmetics is undertaken, the ASSOCIATION should proceed with caution.

This Committee makes the following recommendations:

1. We recommend that a Council on Cosmetic Preparations with functions similar to the Council on Pharmacy and Chemistry of the American Medical Association be *not* formed.

2. We recommend that the *Editor* of Pharmaceutical Abstracts be directed to include in the abstracts for the coming year a limited amount—not to exceed 50 pages—of abstracts of important articles in the field of cosmetology in order to survey the field, and to learn what type of material is important to pharmacists and how it will be received by them. The total cost, which should not exceed $500.00, should be provided for by the ASSOCIATION in the usual way. The Committee believes that such abstracts should consider largely the newer cosmetic materials, their composition and physiological effects, and such information as should be helpful to pharmacists in their compounding of cosmetics or in their judging of those prepared by others.

(Signed) GEO. D. BEAL
A. G. DUMEZ
BERNARD FANTUS
M. G. DE NEVARRE
F. W. NITARDY
HUGH C. MULDOON, *Chairman.*

COUNCIL ON PHARMACEUTICAL PRACTICE.

BY E. FULLERTON COOK.

Fellows of the A. PH. A.

The proposal before the Council for the establishment of its program is somewhat as follows:

On various occasions it has been suggested that the A. PH. A. create a group of "Fellows" elected in recognition of their outstanding accomplishments in one or more of the divisions of pharmacy.

It would seem possible to establish this new A. PH. A. activity in conjunction with and as a fundamental part of the development of this scientific Council and, in doing so, honor those who have already achieved a place worthy of this distinction and at the same time stimulate many others to the meritorious action.

While the primary objective would be the advancement of professional and scientific pharmacy in America, the secondary result, the adequate financing of the work of this Council, is not an unworthy consideration.

The outline of the suggestion is as follows, although many details must still be perfected:

The success of the plan would necessitate the selection by the Council and the nomination of a number of men and women of outstanding accomplishments in Pharmacy for the honor of association as "Fellows." These would be in at least four classes.

First, Honorary.—These would be chosen chiefly from colleagues in foreign countries. A limited number to be elected each year.

Second, Teaching Fellows.—In this group would doubtless soon be included most of the outstanding teachers of pharmacy, chemistry, biological sciences, etc., associated with our colleges of pharmacy.

Third, Fellows in Practice.—For this distinction those would be eligible who had already

demonstrated by outstanding achievements their qualifications for such an honor. It would not only require evidence of technical skill of a high order, but the even more important ethical qualities which are fundamental for professional recognition.

Retail, hospital and governmental pharmacists in practice, members of the scientific divisions of research institutions and of chemical and manufacturing laboratories, editors of pharmaceutical and chemical journals, and outstanding officers and executives in ethical firms would be eligible.

For these three groups there would probably be no fee, except prior membership in the A. PH. A. However, there would be special distinction offered to any "Fellow," namely, that he might also become a "Sustaining Fellow" by the payment annually of an amount to be determined, say, twenty-five dollars ($25.00). This amount should be such that a number would be able to pay it and it is believed that many, including teachers and pharmacists in practice, would wish the distinction of belonging to this group, out of desire to promote this program.

The money thus obtained would be set aside for the broad purpose of "Helping the A. PH. A. to promote the development of every division of professional pharmacy." At first a sufficient amount would have to be appropriated from these receipts to carry on the work of this Council. To function properly there will have to be a small clerical staff at the headquarters in Washington, a permanent secretary on salary, traveling expenses, and perhaps expenses for a publication, certificates, stationery, postage, etc.

Fourth, Sustaining Fellows.—It would not seem impossible to readily secure within a short time from 300 to 400 "Sustaining Fellows" from our present membership.

Our Council must be organized promptly with several subdivisions covering at least the following:

1.—Sub-Committee on nomination of "Fellows."
2.—Sub-Committee on publications.
3.—Sub-Committee on pharmacists in retail practice.
4.—Sub-Committee on pharmacists in hospital practice.
5.—Sub-Committee on pharmacists in governmental service.

The Primary Objective of the Council.—With all of this preliminary statement about "Fellows" the primary objective of the Council is not abandoned. However, to function this Council must be financed. The plan just outlined would seem to accomplish that on a basis which is ideal since it establishes no obligations or handicaps to full freedom of action, and only stimulates the development of the best in ethics and science.

Now as to its function: It is suggested that the Sub-Committee on nominations propose the name of some person deemed worthy of this honor. A suitable form would have been previously prepared. Perhaps certain features of the questionnaire would have to be different for each group but at least each group could have a supplementary list of questions adopted to the particular activities of the nominee. One would be for retail pharmacy, another for the hospital and governmental pharmacist, another for the scientific technician, etc.

In the case of the pharmacist in practice the questionnaire would go into the activities of the pharmacist covering at least a five-year period, a picture of his pharmacy, and the prescription department, the number of prescriptions filled during the period, the relation of his professional activities to purely commercial business, etc.

The position the Council would have to take might be considered extreme by some but its only justification for the high recognition it contemplates would be correspondingly high idealism in pharmaceutical practice by those so honored.

The model of conduct and standard for this program may well be the American College of Surgeons. No surgeon can hope for election as a Fellow in that organization without having thoroughly demonstrated his superior qualifications as a skilled surgeon and also ethical conduct of a high order. Each surgeon, so elected, simultaneously files a resignation which may be accepted by the association at any time, should the "Fellow" fail to maintain the standards of the association.

The standards of this Council must be placed upon an equally high scientific, technical and ethical plane if it is to accomplish its purpose.

It will doubtless be observed that the proposed plan, as just outlined, removes one of the most serious objections to those previously considered. It attempts no classification of drug stores which would have been certain to arouse the antagonism of a large group of splendid pharmacists. It does not exclude from distinction any meritorious person because of affiliations but it honors those who already have demonstrated their faith and belief in the pharmaceutical sciences and profession.

A feature doubtless would be the authorization given to those in retail practice to properly use the special symbol indicating their election as a "Fellow" and thus there would soon be many distinguished pharmacies throughout the country recognized by both physicians and the public.

It is recommended that this general plan be referred back to the members of the Council of Pharmaceutical Practice for the perfection of this program, including suggestions for the Constitution and By-Laws.—See page 944, October JOURNAL.

REPORT OF THE COMMITTEE ON LEGISLATION.*

BY E. F. KELLY.

The following is a summary of the work of the Committee during the ASSOCIATION year, 1935–1936:

Federal Food, Drug and Cosmetic Act, S. 5.—It will be recalled that S. 5 was passed by the Senate in May 1935, was referred to the Committee on Interstate and Foreign Commerce of the House of Representatives and that hearings on the bill were completed by a Sub-Committee during August. A copy of the resolution adopted by the ASSOCIATION in Portland was sent to the Senate and House Committees on Interstate and Foreign Commerce, and at its annual meeting in December 1935, the National Drug Trade Conference adopted the same resolution.

The report of the Committee on the bill, No. 2756, was submitted to the House on May 22, 1936, and represented an almost complete amendment of S. 5. The amended bill was passed by the House on June 19th, under a suspension of the rules. The Senate did not concur in the amendments and both bills were sent to conference. The confrères were in session most of the day on Saturday, June 20th, and were able to reach an agreement on all differences with the exception of whether the Food and Drug Administration, as advocated by the Senate, or the Federal Trade Commission, as advocated by the House, should have control of advertising under the bill. The Senate, before the final adjournment of Congress, passed the bill as finally amended but the House refused to concur and so the bill died.

This means that the effort to extend the existing law will have to be renewed in the new Congress and the incoming Committee on Legislation should have as complete instructions as the ASSOCIATION can give at this time. The legislation is so controversial and the division of opinion with respect to many provisions is so marked, even where there is agreement as to purpose, as to make it difficult for any committee to present the position and views of the ASSOCIATION.

S. 5 as passed by the Senate in May 1935 represents the greatest measure of agreement so far reached with respect to this legislation. At that time, officials of the Food and Drug Administration indicated their willingness to accept this bill with one or two modifications and it is apparent that no difficulty will be encountered in reaching an agreement on these. The Committee understands that this is still the position of the Food and Drug Administration. Other agreements were reached as a result of the House amendments which will clarify and strengthen S. 5 and which it is not intended to discuss here unless that is desired.

Although there are a number of changes that the Committee would like to have made in S. 5, and probably this is true of every one interested in improving and extending the present act, it is believed that any effort to materially rewrite S. 5 will lead to renewed controversy and to further delay in the enactment of this much needed legislation. It appears to be the part of wisdom to enact the bill and later to make such changes as experience indicates to be necessary.

The Committee believes that a bill should be passed during the coming session[1] of the Congress and that the ASSOCIATION should work to that end. Further delay will, we fear, lead to some break-down in the present effective relation between federal and state control, and to disappointment on the part of the public which has a right to look to the industries and the

* See page 950, October JOURNAL.

[1] See page 830, September JOURNAL.

government agencies involved to work out a reasonably satisfactory measure during the approximately three years it has been under consideration.

It is, therefore, recommended that the resolution on this subject adopted at the last annual meeting be re-adopted at this meeting, with the appropriate changes in language since no measure is now before either branch of Congress, and with the additional statement that the ASSOCIATION will not approve any changes in S. 5 which will make it less effective than the present act. In substance, this recommendation means that the ASSOCIATION will again approve S. 5 substantially as it passed the Senate and will oppose any changes which will result in an Act less effective than the one now in operation. The adoption of such a resolution would give the incoming Committee on Legislation and the officers of the ASSOCIATION something definite to actively support and would at the same time, leave them free to accept any changes found necessary to make the measure more effective.

S. 4390, to Amend the National Defense Act.—The Committee coöperated in the successful passage of this legislation to commission pharmacists in the Medical Department of the U. S. Army.

To Restrict the Source of Alcohol to Cereal Grains.—Several bills were considered by both Houses of Congress which contained provisions to limit the source of alcohol to cereal grains. The ASSOCIATION'S objection was expressed wherever the proposal affected drugs and medicines and in no instance was the provision approved.

The following letter was addressed to Senator King of Utah, and copies of it were submitted to others interested in opposing the provision:

"I desire to record the emphatic objection of this ASSOCIATION to the proposal that neutral spirit, including ethyl alcohol, for medicinal purposes shall be distilled only from grain.

"The United States Pharmacopœia defines alcohol synonyms Ethanol, Ethyl Alcohol, Spiritus Vini Rectificatus, for medicinal purposes, as 'a liquid containing not less than 92.3% by weight, corresponding to 94.9% by volume, at 15.56° C., of C_2H_5OH,' and gives appropriate descriptions and tests for its identity, purity and strength. It does not, however, restrict the source of alcohol and it is our conviction that any attempt to restrict the source of such a necessary basic chemical material is highly undesirable."

Similar provisions will probably be proposed later and should be vigorously opposed when they apply to drugs and medicines.

State Tax on Alcohol and Distilled Liquors.—In the efforts to raise additional revenue by taxation, there is a tendency to tax these products heavily, based on their use for beverage purposes, and in some instances, their use for non-beverage and industrial purposes is not exempted as should be the case.

The Legislative Committees of State Associations should give careful study to such measures and should impress upon members of the legislatures and on state officials that alcohol and other distilled spirits used for medicinal purposes and particularly in the preparation of drugs and medicines, including prescriptions, should be exempted from such additional tax burdens.

For example, a bill was recently enacted in Kentucky which while it exempted drugs and medicines containing alcohol that are imported, imposes a tax on alcohol and distilled spirits even though they will be used in the preparation of similar drugs and medicines.

All such added burdens in expense and in record-keeping tend to discourage pharmacists from making drugs and medicines and in addition they increase the cost of drugs and medicines to the sick.

Secret Service Reorganization Act, H. R. 11453.—This measure proposed to consolidate the Narcotic Bureau and the Alcoholic Tax Unit as well as other agencies under the Secret Service. The A. PH. A. joined with other pharmaceutical organizations in opposing the proposal on the ground that these agencies which control the legitimate use of narcotics and alcoholic liquors, respectively, were discharging their important duties very effectively and should not be interfered with. It was also emphasized that to place these agencies under the Secret Service would almost certainly bring those licensed to manufacture, distribute and dispense narcotics and alcoholic liquors under police control.

Careful attention should be given in future to see that the present independent and very efficient status of these agencies is not interfered with.

The National Fair Trade Enabling Act, S. 3833.—Your Committee coöperated in every way

possible as instructed by resolution, with the National Association of Retail Druggists in promoting this measure which is intended to revise Section Two of the Sherman Act as to legalize contracst made in pursuance of the provision of any state fair trade act.

Your Committee also coöperated with the N. A. R. D. in its efforts to secure legislation to control unfair discounts and allowances which resulted in the passage of the Robinson-Patman Bill.

The Enabling Act was introduced in the Senate by Senator Tydings and hearings on it were held before a Sub-Committee of the Senate Committee on Judiciary. The bill was favorably reported and passed the Senate on June 8, 1936. A similar measure was introduced in the House and referred to the Committee on Judiciary. Due to the pressure of other legislation, no hearings or action was taken on the bill and it died in committee. It is expected that the bill will be enacted in the next session of the Congress.

Anti-Narcotic Acts.—The model state act with amendments was enacted into law in Alabama, Ohio, Wisconsin and Mississippi. This brings the total of states that have adopted the model act, in almost every case with amendments, to 29. This ASSOCIATION has been asked for an opinion in many instances and has always suggested the amendments to the model act as approved by the National Drug Trade Conference.

Two changes of importance have been made in the administration of the Harrison Act as set out in T. D. 22, issued by the Treasury Department in July of this year and as the result of the enactment by Congress of Sec. 806 of the Revenue Act of 1936, approved June 22, 1936.

Class VI is added to the classes of persons subject to the tax, covering "Persons not registered in Class I, but lawfully entitled to obtain and use in a laboratory narcotics for purpose of research, instruction or analyses." Registrants in this class are required to keep special records as prescribed by the Commissioner of Narcotics.

The other change comes under the heading "Evidence of Qualification." The application for registration of every person must be supported by his affidavit, or acknowledgment before two witnesses in lieu of oath where the tax covered by the application is not more than $10.00 (see Art. 5), showing him to be legally qualified or lawfully entitled under the laws of the jurisdiction in which he is engaged or proposes to engage in any activity to produce, import, manufacture, compound, deal in, dispense, sell, distribute, administer or give away narcotics. This change means that applicants must show that they meet the requirements in the jurisdiction in which they propose to engage in the activities involving narcotics; otherwise, they will be refused registration under the Federal Act. This change gives the national and state authorities greatly increased power to control registrants, and also gives the states an opportunity to regulate narcotics by legislation.

State Laws Affecting Pharmacy as a Profession.—The ASSOCIATION has also been requested to coöperate in connection with a number of efforts to amend existing laws in the District of Columbia and in several states, and has given such data and assistance as was possible. The report of the Committee on the Development of Pharmacy Laws will provide further information.

The Chairman of the Committee on Legislation wishes to express his appreciation of the coöperation given by the other members of the Committee, and the Committee desires to record its sorrow and sense of loss in the untimely death of W. Bruce Philip.

REPORT OF THE NATIONAL COMMITTEE ON PROFESSIONAL INFORMATION PERTAINING TO DENTAL PHARMACY OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.*

The work of this committee deals with two projects—namely, that of aiding the pharmacist to better understand the requirements of dental medication and of providing a service for the dentist so that he may write more prescriptions.

From the experiences of your committee, persons lecturing to dentists on pharmaceuticals would be greatly impressed with the eagerness with which the dental profession seeks information on Materia Medica and prescription writing. Your committee is convinced that there is a real opportunity for the pharmacist who will study the needs of the dentist to gain his patronage as a prescriber of drugs and also to supply him with many of the materials he uses in his office. The dental profession is waiting to do its part if pharmacy will lead the way.

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* See page 953, October JOURNAL.

The choice of a director for this work is, as would be expected, an all-important factor in the success of a project to develop a prescription service to the dentist. No undertaking of this magnitude can be successful without the proper person to guide the efforts of those who are interested in developing this service to the dental profession.

A college of pharmacy has the equipment to carry on this type of work. It has the prestige necessary to give such a project stability. A college removes the commercial angle and places the development on a purely scientific and educational basis. It is on such a basis that this work should proceed. Therefore, it is the opinion of this committee that it would be best to have this work supervised or headed by some member on the staff of a college of pharmacy. The balance of the committee should be made up of practicing pharmacists.

The dentist and pharmacist alike should learn to look to the pharmacy college for scientific information. It should be generally understood that when information not readily available to the dentist or pharmacist pertaining to dental medication is desired, a phone call or a communication to the college will be given prompt attention. College libraries, through scientific journals, latest editions of books, manuals and handbooks, have available more sources for research than it is practical for an individual to have.

At the present time each state should take charge of and conduct its own dental pharmaceutical activities. Ultimately it would be desirable to have all such work guided and directed by the AMERICAN PHARMACEUTICAL ASSOCIATION. This should be a service of the AMERICAN PHARMACEUTICAL ASSOCIATION to the pharmacist and instituted at the earliest possible time.

This past year contacts with the dental profession were made which bid well to become a vital part in an educational program of dental prescription writing. These same contacts also point the way to a more sympathetic understanding and a better appreciation of each profession for the other. This affiliation with the dental profession was accomplished through clinics or round table discussions conducted by pharmacy college staff members at dental society meetings and conventions. A clinic usually consists of four or five lectures and demonstrations given over a period of three consecutive days.

The first clinic given by a pharmacy college to the dentists assembled in New York State from all parts of the United States and several foreign countries was presented at the Greater New York December Meeting of the Dental Societies of Districts No. 1 and 2, in the Hotel Pennsylvania. The subject was "Medication, How and What to Prescribe." Each of the lectures was given to a full attendance. The popularity of a clinic can many times be determined by the patronage it receives from the dentists, since they are privileged to make a choice of the clinics they desire to attend.

A round table discussion was given before the Connecticut Dental Society in convention at Stamford, Connecticut, this past April. In this procedure a number of questions the dentist desires information about are prepared, either by the dental society or the discussion leader, which will be printed in the program sent to the dentists. The printed questions and many others will be asked of the discussion leader by a captain chosen from the dental society and answered by the discussion leader. It may be of interest to have me read the questions this dental society desired to have discussed.

1. What advantages to the dentist are there in writing prescriptions?
2. What happens when prescriptions are not written?
3. How should the prescription be written?
4. How can office expense and expense to the patient be reduced by writing prescriptions?
5. Where can the dentist obtain authentic information on medication without charge?
6. What medication can be prescribed to reduce the nervous tension of the hypersensitive patient?
7. What medication may be prescribed to relieve pain after dental operations?
8. What medication may be used to relieve pain from insertion of the needle?
9. What drugs, other than narcotics, may be prescribed to control pain and produce sleep?
10. What and how are the drugs used to relieve pain in drilling?
11. How can the proper use of drugs increase the business of the dentist?
12. How can the dentist write for a mouth wash base so he can control the medication he prescribes as well as the flavor and color?

13. What are the formulas and how can a plain or medicated tooth powder be prescribed?

14. (*a*) How can the use of abrasive agents in cleaning teeth be made more pleasant to the patient? (*b*) Do children dread to have their teeth cleaned at your office?

15. Does the responsibility of the dentist stop when he hands the patient a prescription?

Your chairman had the pleasure of being the clinician and discussion leader on the above two programs. In addition to this work, he has lectured to many district dental societies.

In May, Doctor C. Leonard O'Connell lectured before the Central Pennsylvania 7th District Dental Society Convention at Johnstown, Pennsylvania, on "Medication, How and What to Prescribe." You will note an attempt was made to use the same theme at the different conventions. During this convention the Cambria-Somerset Retail Druggists Association gave a luncheon to Dr. O'Connell at which both pharmacists and dentists joined hands for an enjoyable time.

Leslie Ohmart, of Massachusetts College of Pharmacy, lectured before the Northeastern Dental Society of Massachusetts in June. He distributed prescriptions printed on cards, prepared jointly with Harvard Dental College. Assistant Dean H. C. Newton, of the same institution, explained the dental prescriptions to the pharmacists attending the Massachusetts State Pharmaceutical Convention, thus giving the desired tie-up to make the work effective.

Dean A. O. Mickelsen has made arrangements in the professional pharmacy at his school to have junior and senior dental students present prescriptions for compounding. Through the efforts of Dean Mickelsen the dental students are given instruction in prescription writing. This is a most important work if dentists are to learn how to write prescriptions.

Rutgers University College of Pharmacy has given instructions in Materia Medica and prescription writing to practicing dentists at the college building for the past several years.

Professor Terry has taken a very active part with the dentists in Chicago. He has displayed pharmaceuticals before the Chicago Dental Convention, which is one of the largest in the country. He has made numerous other contacts with the dental profession.

Dean J. F. McCloskey supervised and prepared an exhibit before the American Dental Association at its national convention in New Orleans.

Lawrence Templeton, of Illinois College of Pharmacy, had charge of the exhibit of the United States Pharmacopœia and National Formulary dental preparations at the American Dental Association convention held in July at San Francisco, California. The exhibit was sponsored by the AMERICAN PHARMACEUTICAL ASSOCIATION.

Professor M. J. Andrews in coöperation with the Maryland Dental College has prepared a prescription service for the dentist. These contacts with dental colleges are especially valuable.

Dr. A. R. Bliss has appeared before several dental societies in his state lecturing on official products. At the request of dentists he has given a course in prescription writing.

Dr. F. J. Bacon, of Western Reserve University School of Pharmacy, gives instruction in Materia Medica to the dental students in the dental school of that university.

Dr. Ralph Clark, of Wisconsin University College of Pharmacy, has instituted a prescription service to the dental profession. Through the medium of a state pharmaceutical journal, he dovetails the work done with pharmaceutical and dental groups.

Secretary Samuel Gordon, of the Council on Dental Therapeutics, has been most helpful to our committee. It is hoped that through the work which is planned for our committee, we shall in the near future, be in a position to render to the Council on Dental Therapeutics a service which we have reason to believe will be appreciated.

Your chairman is revising a pamphlet published by the National Association of Retail Druggists, "Dental Drugs and Preparations," which will be available soon for both pharmacists and dentists.

Pharmacy colleges which are taking an active part in developing a prescription service to the dental profession are listed as follows:

Howard College School of Pharmacy.
University of Illinois College of Pharmacy.
Loyola University New Orleans College of Pharmacy.
University of Maryland School of Pharmacy.
Massachusetts College of Pharmacy.
University of Montana School of Pharmacy.

North Dakota Agricultural College School of Pharmacy.
North Pacific College of Oregon School of Pharmacy.
University of Oklahoma School of Pharmacy.
Philadelphia College of Pharmacy and Science.
Pittsburgh College of Pharmacy, University of Pittsburgh.
Purdue University School of Pharmacy.
Rutgers University College of Pharmacy.
South Dakota State College, Division of Pharmacy.
Temple University School of Pharmacy.
Western Reserve University School of Pharmacy.
University of Wisconsin Course in Pharmacy.

Seventeen colleges of pharmacy have stated that they are coöperating in this work with the dental profession. From information taken from a questionnaire, sent to the pharmacy colleges only twenty-one responded that they were taking a part to further develop prescription writing by the physician. Taking into consideration that work with the dentist was only started by pharmacy colleges six years ago, it would seem that a very encouraging progress has been made, since efforts to improve the prescription writing of the dentist now closely parallel those being made with the physician. In most cases the colleges mentioned are working with both medical and dental groups. If your college has taken a part in such a program with the dental profession and is not listed, it will be appreciated if you will inform the chairman of this committee.

Your committee feels that, even though many things have been accomplished this year, in national movement, the experience gained from years of conscientious effort and activity by such a committee is necessary for an efficient national organization. Therefore, being of the opinion that pharmacy can best advance by rendering a greater scientific service in new as well as old fields, we recommend that the work of this committee be continued.

A. R. Bliss, Jr. Ralph E. Terry
Ralph W. Clark George C. Schicks, *Chairman*.
A. O. Mickelsen

(*Committee Reports will be continued.*)

PHARMACOPŒIAL ERRORS.

Considering that the Pharmacopœia is not an ordinary book, but a collection of nearly one thousand separate monographs, in most of which are scores of entrances for errors other than literary slips, and considering that twenty thousand copies of the volume have been circulated, among readers who daily use the book, and who are prompted by many motives, including, sir, the praiseworthy object of earning your guineas (in a *C. & D.* competition)—to detect and publish errors, it is to me astonishing that a bare half hundred or so of real corrections—and scarcely any involving consequences of importance—should have been made or have been brought to light. I am sorry that there should be one. But errors there must be and are in all Pharmacopœias. As you have said, "No Pharmacopœia, however laboriously compiled and edited, can be issued from the press in a perfect state; errors must and will creep in." The labor of compiling and editing a Pharmacopœia is enormous, as perhaps only compilers and editors of Pharmacopœias fully know. (In a letter to the Editor from the late Professor Attfield.)—From *Chemist and Druggist*, November 7/36 in "Retrospect of Fifty Years Ago."

Pharmacy has for its primary object the service which it can render to the public in safeguarding the handling, sale, compounding and dispensing of medicinal substances.—Code of Ethics, A. Ph. A.

THE SECTIONS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

ABSTRACTS OF THE MINUTES OF THE SESSIONS HELD IN DALLAS, TEXAS, AUGUST 24 TO 29, 1936.

See Abstracts of the Minutes of the Council in September JOURNAL; of the General Sessions and House of Delegates in October issue. The meetings were held in Hotel Adolphus.

The minutes of the Sections appear in this number of the JOURNAL. Titles of papers will be given in the minutes; discussions, if any, will be printed when paper is published if not included in the minutes. The Editor will be thankful for correction of errors.

Abstracts of a large number of papers were distributed at the meetings; some have been printed. Abstracts of some papers are still obtainable by addressing the JOURNAL OF THE A. PH. A., *2215 Constitution Ave., Washington, D. C.*

SCIENTIFIC SECTION.

The First Session of the Scientific Section was called to order by Chairman H. M. Burlage, August 26th, at 2:00 P.M., in Hotel Adolphus.

The Chairman stated that the first order of business would be the Address of the Chairman during which F. E. Bibbins presided. The address follows:

THE CHAIRMAN'S ADDRESS.

BY H. M. BURLAGE.

As chairman of the Scientific Section it is my happy duty to welcome you to the sessions of the Section, which, I believe, have much to offer us that is instructive and interesting, since our efficient secretary has arranged a very worth-while program.

I wish now to present certain subjects for consideration, which have, no doubt, in part been offered to the Section by previous chairmen without any definite action being taken on the same. Your chairman believes, however, that these points become increasingly important as each year the number of papers before the Section multiplies and, therefore, definite policies should be adopted regarding them and their disposal.

Most of us who attend this Section are interested in the scientific developments that our profession offers us. We are at the same time interested in attaining and maintaining the highest standards for the offerings before this Section with the realization that they are to be published and that such endeavors are and will be scrutinized not only by workers in our field but in other fields as well; and if these works have been found to be worthy and without fallacies and injustifiable claims they not only bring commendation to their authors but to the ASSOCIATION and the profession as a whole.

In order to be assured that papers presented before and published from this Section meet these tests, I was glad to see the Section establish a Board of Review of Papers in recent years. Last year the chairman recommended that, in order that the Board might function more efficiently and promptly, its membership be increased to ten (10) and that each member be appointed to serve a period of five (5) years. Your present chairman was charged with the selection of this Board and after much consideration selected one which he felt was representative of the important divisions of Pharmacy. It is hoped that these selections have met with your approval; and how well and with what seriousness they have assumed their responsibilities the Chairman of this Board will have occasion to report later.

I feel that this Board in order to function efficiently should be empowered to draw up definite rules, regulations and standards and be guided by certain policies adopted by this Section from time to time in order that such papers presented to and published under this Section meet those standards before they are published in the JOURNAL. Other scientific organizations have very rigid standards for such publications.

Our profession is judged from many angles as is any other profession. One of these is the type and calibre of the official publication of the national organization representing it. We are, therefore, interested in the JOURNAL, A. PH. A. I know of no scientific organization which asks so little by way of annual dues and yet attempts to do so many things, including the publica-

tion of the JOURNAL. Those responsible for the JOURNAL with its present status are to be commended on their accomplishments and efforts to maintain a publication of standing with a budget that is of necessity so small.

One of the most worth-while recent accomplishments was the incorporation of the YEAR BOOK with the JOURNAL under the Section of Pharmaceutical Abstracts. This step has made the JOURNAL more valuable to research workers in the various fields of pharmacy because abstracts of current pharmaceutical articles have been made available with a surprising degree of promptness which was not the case when the YEAR BOOK existed. I believe we all appreciate the value of the present set-up.

There are, however, certain changes and policies which might be adopted in editing the JOURNAL without additional cost. I offer these suggested changes to the Section because I believe it should be interested in them. At the present time the JOURNAL edits a Section known as the *Scientific Section*. An examination of the contributions published under this heading reveals that not only scientific articles have been published here but also those of a non-scientific character—*i. e.*, commercial, historical, legislative, etc.—emanating from other sections of the A. PH. A. or elsewhere. I believe that the JOURNAL would attain a more respected position than it now occupies if only papers of a scientific character were published under this particular section. The present policy of publishing all types of papers under the *Scientific Section* can easily give the impression that all papers therein are passed by the Board of Review of Papers. We know that this is not the case, since this Board has no authority to examine papers of another section and other sources. It would seem that the JOURNAL would become more usable and of more interest to us and those whose interests lie in other fields of pharmacy if the papers from the various sections could be segregated and published under their respective section headings or, at least, in a section different from that of the *Scientific Section*.

Recommendation No. 1.—I, therefore, recommend that this Section request that only such papers that have been presented before it and/or passed by the Board of Review of Papers be published under that heading of the JOURNAL.

Recommendation No. 2.—I, further, recommend that it be the consensus of opinion of this Section that no paper be published in the *Scientific Section* of the JOURNAL before it has been examined by the Board of Review.

Further suggestions concerning the JOURNAL have, no doubt, been considered in previous meetings of the Section and may be affairs about which the Section should have no concern. I believe, however, that there should be a clearly defined policy with regard to the publication of scientific papers under the following points:

(*1*) *Order in Which Papers of This Section Are Published.* At the present time there seems to be no set policy in this regard. The reviewer is asked to state the order in which papers submitted for review should be published from the standpoint of importance. This procedure is wise with regard to papers that have been presented at the sessions of this Section but I do not believe that any paper presented by title or offered for publication during the period between annual meetings of the Section should have precedence over one read before the Section unless the reviewer feels that such paper contains information of such importance to warrant priority. Certainly an author who has shown sufficient interest in the Section and his paper or papers to present them or have them presented at the Sessions has a right to demand priority for his paper, especially if he feels it to be of sufficient importance. It is a fact that this priority has not prevailed in the past nor does it exist at present, because an examination of recent numbers of the JOURNAL shows papers of the 1934 meeting, or others, have just been published along with papers not presented at any session of the Section and with those by individuals who have little or no connection with the ASSOCIATION and Pharmacy.

(*2*) *Papers of Outside Authorship.* Each year there are published in the JOURNAL quite a number of papers whose authors have connections and interest quite remote from Pharmacy. In order to maintain a high standard for the JOURNAL these papers should be scrutinized very closely by the Board of Review and the Editor, since they might have been refused by other scientific publications and because of this fact are being "shopped around" in order to be published. Such outside papers certainly should not be published in the *Scientific Section* before those offered by members of the ASSOCIATION unless they are judged of extreme importance by the reviewer.

Recommendation No. 3.—In light of the discussion just presented I recommend that the Section state a very definite policy as to the proper disposal of papers, especially from the standpoint of priority, before the Section and under the Section Heading of the JOURNAL for the benefit of the Board of Review and the Editor.

In conclusion, I wish to thank the members of the Section for the honor that they have conferred upon me in selecting me as Chairman and to thank the Secretary for his efforts in arranging our program.

Chairman Bibbins appointed the following Committee on Chairman's Address: J. C. Krantz, Jr., *Chairman*, F. J. Goodrich, William J. Husa. The Chairman's Address was referred to the latter committee.

The Secretary's report follows:

SECRETARY'S REPORT.

BY FRANCIS E. BIBBINS.

Your secretary wishes to offer the following report:

The secretary acknowledges coöperation which he has received from the chairman and other officers of the Section as well as from the secretary and officers of the A. PH. A.

A call for papers was published early this year. Later, this was followed by sending out 290 letters to a mailing list of those who have participated on the programs of the *Scientific Section* from previous years. The response from these appeals was very satisfactory, as you will note from the number of papers listed on the official program.

I would, however, like to make this comment. It makes it very difficult for the secretary to arrange the program and provide for the publication of the abstracts, if the authors wait until the last three or four weeks before sending in their titles.

I also wish to report that most of the authors have submitted their papers in duplicate as recommended in our By-Laws; the extra copy going to the Committee on Ebert Prize, which greatly facilitates the work of that committee.

There has been considerable correspondence from the secretary's office. We have attempted to promptly acknowledge receipt of the titles, abstracts and papers, and to be generally useful in promoting the work of the *Scientific Section*.

The report of the Secretary was accepted, on motion duly seconded and carried.

The report of the Chairman of the Committee on Board of Review of Papers was presented and duly accepted; it follows:

BOARD OF REVIEW OF PAPERS.

FRANCIS E. BIBBINS, *Chairman*.

Your chairman wishes to make the following report:

The increase in the size of this committee authorized at the Portland meeting has enabled the committee to review a large number of papers without asking any one member of the committee to sacrifice a great amount of time for this purpose.

The committee has, this year, reviewed approximately one hundred papers, eighty of which were presented at the Portland meeting of the *Scientific Section*, and the others were submitted by the authors to the editor during the interim between meetings.

A large number of papers were returned to the authors for revision, such as the elimination of unnecessary copy, to correct inaccurate statements, and some to be completely rewritten.

In several cases the committee has refused to approve papers for publication on account of previous publication of the data elsewhere, or because the paper did not contain any experimental data to support the conclusions. These papers were returned to the authors with a suitable statement from Editor Eberle's office.

The chairman wishes to acknowledge the splendid coöperation received from the other members of the committee in reviewing the many papers assigned to them, and he also wishes to recognize the promptness in which these papers were reviewed and returned to the Editor.

I also wish to acknowledge the excellent coöperation we have received from Editor Eberle in this work. We recognize that it has added additional correspondence in his office, and may at times have held up his work on the JOURNAL while awaiting reports from this committee.

George F. Reddish brought up the question of what would be considered in the acceptance of a paper, because brief statements had appeared in another publication.

The Committee to Coöperate with the National Conference on Pharmaceutical Research reported progress, through John C. Krantz, Jr., on advice of Chairman John C. Bauer.

Chairman Edward E. Swanson of the Committee on Monographs reported:

The Monograph on Aconite, the result of several years of work by the various members of the 1934 and 1935 Committee, is now in the hands of the publishers and will shortly reach the Council for their approval.

The present Monograph Committee will not function until after the publication of the Aconite Monograph.

The report was accepted.

Chairman Burlage appointed the Committee on Nominations: E. E. Swanson, *Chairman;* Frank O. Taylor, W. G. Crockett.

James C. Munch suggested and, after further remarks, made a motion to the effect that, if one author presents a paper, it be considered as one paper; if two papers are presented by two authors of the same paper, each should be permitted to present a paper, the additional paper for information to the Secretary. If a paper is presented by title, the paper should appear in printed abstracts and submitted. The motion was referred to the Committee on Chairman's Address.

There being no further general business, the reading of papers was called for. They were presented in the following order:

"Investigation of Fish Testes for Male Sex Hormones," by L. W. Hazleton and F. J. Goodrich. Presented by the latter. (No discussion.)

"The New Biologicals of the U. S. P.," by Lieutenant Joseph A. Ortolan. Read by title.

"Determining the Virulence of Bacteria by Their Electromotive Velocity," by R. E. Greenert and L. K. Darbaker. (Absent.)

"The Relation between the Rat and the Mouse Units of Estrogenic Activity," by L. W. Rowe and A. E. Simond. Presented by L. W. Rowe. (No discussion.)

"The Relation of Barbital and Phenobarbital to Granulocytopenia," by J. C. Kopet and F. J. Goodrich. Presented by the latter. (No discussion.)

"Sodium Formaldehydesulfoxylate as a Preservative," by John C. Krantz, Jr., Ruth Musser and C. Jelleff Carr. Presented by the latter. (No discussion.)

"A Contribution to the Pharmacology of Pinacolone," by John C. Krantz, Jr., C Jelleff Carr, Ruth Musser and Frank Beck. Presented by John C. Krantz, Jr. (No discussion.)

"A Chemical and Pharmacological Study of Phytolacca Americana, N. F.," by Samuel W. Goldstein, Glenn L. Jenkins and Marvin R. Thompson. Presented by Glenn L. Jenkins. (No discussion.)

"The Effect of Cystine on the Toxicity and Trypanocidal Activity of Neoarsphenamine," by A. E. Jurist and W. G. Christiansen. Presented by the latter. (No discussion.)

John C. Krantz, Jr., stated that there have been reports in the literature on particular sensitivity to arsphenamine dermatitis, that there is a high incidence of low grade scurvy and that vitamin C has been useful in combating this.

The author replied, they had been studying that point for at least a year and a half. They believed it to be a very important point. They had recommended that a high vitamin C level be maintained.

"Biological Assay of Gelsemium," by B. V. Christensen and L. G. Gramling. (No discussion.)

"The Stability of Digitalis as Drug," by L. W. Rowe and H. W. Pfeifle.

First Vice-Chairman Jenkins took the chair.

James C. Munch said, "there is one extremely important deduction from this work, because the question has arisen whether it is necessary to pick digitalis off the original plant, dry it and place it in individual hermetically sealed ampuls, or in some other way conform to the U. S. P. XI requirements for shipment and transportation of digitalis.

"If the digitalis leaf, properly dried, does not lose strength under the conditions Dr. Rowe

has used, it would seem the U. S. P. XI requirement for storage, 'that it be hermetically sealed,' may not be necessary.

"Some work was done by Hamner, in Denmark, in which he attempted to show that the deterioration of the digitalis leaf under commercial conditions was associated with a moisture content. I am wondering whether you have any data on the moisture content of your leaves. We found that when the digitalis leaf contains less than one and one-half per cent of moisture it was stable. If it contained more, it went to pieces."

The author considered this a very interesting point. He had no data with him. He had the samples.

"The New Ergot Alkaloid," by Dr. Albert Stoll. (This paper has been returned to the author, because it had been printed in a German publication, April 1936.)

"Quinone Formation in the Thalleioquin Reaction. A New Preparation of Quinoline-*o*-Quinone," by George W. Hargreaves. (No discussion.)

Chairman Burlage resumed the chair.

"The Influence of Dextrose on the Toxicity of Mercurochrome in Rabbits," by A. Richard Bliss, Jr., and George R. Livermore. The Secretary did not have the paper, so it was not read.

"Anthelmintics II. A Comparison of Chenopodium Oil, Diheptanol Peroxide and Certain Ozonides," by W. A. LaLande, Jr., and Dr. L. W. Butz. Read by title.

"The Synthesis and Pharmacological Action of Some Substituted Monobasic Acids and Related Ketones," by Clifton E. Miller and R. A. Cain. The latter presented the paper.

W. G. Christiansen said they had investigated a large number of amides and ureides in their laboratory. Some of the compounds were very effective when tested on rats. Similar tests on dogs, which gave promising results in rats, were quite ineffective and of practically no value.

He suggested that the work be extended further.

The next five papers on the program were read by title:

"The Development of a Method for the Estimation of the Ergostetrine (Ergonovine) Activity of Ergot Preparations," by Marvin R. Thompson; "The Bio-Assay of Strophanthus Preparations," by William H. Hunt and Marvin R. Thompson; "The Bio-Assay of Digitalis with Observations on the p_H Factor," by C. T. Ichniowski and Marvin R. Thompson; "The Pharmacology of Pyrethrum Flowers," by Harry Rosen and Marvin R. Thompson; "A Comparison of the Pharmacological Syndromes of Ergostetrine (Ergonovine, Ergoticin, Ergometrine, Ergobasine) and the Ergotoxine-Ergotamine Group of Ergot Alkaloids," by Marvin R. Thompson.

"Phenol Resistance of Staphylococcus Aureus," by E. E. Vicher, Esther Meyer and E. N. Gathercoal. Presented by the latter.

G. F. Reddish complimented Dr. Gathercoal on the thoroughness with which he has done this work. He is rather serious about it and has a just right to be so. G. F. Reddish continued: "The work has been under discussion for the past two years and, to be perfectly frank, I have opposed it from the beginning.

"We have worked for about twelve years in order to bring our standards on *Staphylococcus aureus* up to F. D. A. standards. I mean by that, that after twelve years or so, the whole country has been accustomed to and agreeable to the high standard established by the Food and Drug Administration.

"I might say that in establishing this standard, which I did in 1925, twenty-five strains of *Staphylococcus aureus* were obtained from the Walter Reed Hospital under all sorts of pathological conditions, and it is true, Dr. Gathercoal, that eleven of these strains met the standard you propose, or have adopted as a National Formulary standard. The other fourteen gave the standard which the Food and Drug Administration finally adopted.

"We felt it was necessary to require that antiseptics be not weaker brothers, but stronger ones. As a matter of fact, they are the ones that do the most damage. Industry and all the testing laboratories throughout the country are having no difficulty, so far as I know, in meeting this standard. There have been some difficulties in certain testing laboratories, but I have taken it upon myself to go to those laboratories that have reported this trouble to me, and have been able to find out exactly why they have had this difficulty."

Continuing his discussion, Dr. Reddish concluded that he was definitely opposed to the National Formulary Standard.

"A Comparative Study of the Absorption of Digitalis When Given Orally and Rectally to Cats," by W. Arthur Purdum. Read by title by H. M. Burlage.

"Cultivation of Ephedra Sinica in South Dakota," by Lovell D. Hiner. (No discussion.)

Chairman Burlage announced the next meeting of the Section and this Session was adjourned.

SECOND SESSION.

The Second Session of the Scientific Section was convened by Chairman H. M. Burlage, August 27th, at 9:15 A.M. The reading of papers was continued in the following order:

"The Assay of Spirit of Ethyl Nitrite, U. S. P. X–U. S. P. XI," by Ray S. Kelley.

F. O. Taylor asked if the author had tried the U. S. P. method of passing the carbon dioxide through at a considerably more rapid rate.

He replied "he had and that iodine is liberated even more than when the amount of carbon dioxide is cut down."

Mr. Taylor's experience had been just the opposite.

Arthur Osol inquired whether starch had been used in the assay.

The author had used starch, but it had not made any particular difference in the result.

S. L. Hilton said he had not tried the U. S. P. XI method, but he had done considerable work in the assay process of U. S. P. X and obtained very good results.

Three or four years ago the health officer of the city of Washington paid considerable attention to spirit of nitrous ether. He had suggested to the health officer to have his chemist do some work on the assay of ethyl nitrite in spirit of nitrous ether.

S. L. Hilton collected samples from every manufacturer in the city of Washington in original pound-bottles and gave the health officer a portion of these samples. The original bottles were kept in the freezing department of an electric refrigerator, in amber and in flint bottles. After they were filled, one set was kept in the refrigerator, another on a shelf and a third set in the prescription room. At the end of six months assays were run on all of the samples as well as the original and again at the end of fourteen months. It was found that the original bottle, even if only partially filled remained quite constant in ethyl nitrite content. Also the samples in the refrigerator, and the samples in amber bottles seem to deteriorate much less than the samples in the flint bottles. The samples that came from the ice box showed very little deterioration.

He had examined the samples kept in the ice box. He found at the end of the year that two samples had not become acid and the assays varied only one point in the first decimal. He said that spirit of nitrous ether should be kept in an ice box and the patron so advised. Spirit of nitrous ether should not be poured from the stock bottle into the small containers, so there will be no agitation.

Since the work was done with the health officer referred to, about six months ago, he had no occasion for prosecution. The article is published in this issue of the JOURNAL.

"Some Notes on the Toluene Moisture Determination," by H. G. DeKay. Read by title.

"The Use of New Solvents in Alkaloidal Assays," by M. L. Jacobs and Glenn L. Jenkins.

"Analysis of Glycerophosphates. II. Determination of Small Amounts of Phosphates in Glycerophosphates," by R. M. Hitchens and M. S. McCauley. The two foregoing papers were presented by R. M. Hitchens. (No discussion.)

"Analysis of Glycerophosphates. I. Discussion of Assay Methods for Ferric Glycerophosphate and Manganese Glycerophosphate," by R. M. Hitchens.

"The Assay of Monoethanolamine in the Presence of Theophylline," by Asa N. Stevens.

"The Assay of Theophylline: Theophylline with Ethylene Diamine U. S. P. XI and Theophylline Monoethanolamine," by Asa N. Stevens and Dale T. Wilson. The two foregoing papers were presented by Asa N. Stevens. (No discussion.)

"Nitrogen-Alkyl Barbituric Acid Derivatives." Illustrated by lantern slides, presented by the author, Edward E. Swanson.

E. V. Lynn inquired relative to the method of administration, the test animal and how the amount of anesthesia and the duration of the action was judged.

The author advised that these results were obtained with the white rat from intra-peritoneal injection. The duration of action was indicated by the tail and corneal reflex.

E. V. Lynn inquired whether the white rat was not a poor animal for such experiments.

The author replied that it is an exceptionally good cheap animal to use for barbiturate, because rats show a distinct index. Rabbits are of no value for the testing of barbiturates. Dogs are better than any other animal, but for a cheap animal the rat is one of the best.

"Detection of Diethylphthalate in Spiritus Frumenti," by Israel Schwartz. Read by title. (Published in September JOURNAL, page 749.)

"The Decomposition of Solution of Sodium Sulfide," by G. Bulfer, A. J. Boyle and L. H. Baldinger. Read by the latter. (No discussion.)

"Methods of Determining the Alkalinity Imparted to Water by Ampul Glass," by R. K. Snyder. Read by the latter. (No discussion.)

"The Determination of Alcohol in Pharmaceutical Products. II," by T. H. Rider, and "The Stability of Diothane Solutions III." Both papers were read by T. H. Rider.

Dr. E. V. Lynn inquired whether normal heptane was used entirely and whether it was readily obtainable.

The author replied in the affirmative and that it was readily obtainable.

"Extraction Studies on Ipecac," by Samuel W. Goldstein. Read by title.

"Stabilized Syrup of Ferrous Iodide," by P. L. Burrin, A. G. Worton and F. E. Bibbins. Read by the latter. (No discussion.)

"Bacteriostatic Azo Dyes," by W. Baker, W. A. Lott, E. C. Billheimer and W. G. Christiansen. Read by the latter. (No discussion.)

The next series of papers was presented by W. J. Husa. The names of co-authors are given.

George R. Jones—"Drug Extraction X. The Swelling of Powdered Drugs in Liquids."

Paul Fehder—"Drug Extraction XI. The Extraction of Jalap."

Paul Fehder—"Drug Extraction XII. The Effect of Variation in Proportion of Moistening Liquid on the Percolation of Jalap."

Paul Fehder—"Drug Extraction XIII. The Extraction of Ipomea."

G. A. Bergy inquired whether any work has been done along the line of the extraction of such powdered drugs by the use of some of the newer solvents, such as carbinol.

W. J. Husa replied that some of the newer solvents had been used in preliminary work, but not in the making of fluidextracts, because that raised the question of whether those could be taken internally or not. That study was not gone into.

The next series of papers were on "Fluidextract of Uva Ursi," and "Fluidextract of Senna," by C. O. Lee and his co-workers. The names of the latter are given. Presented by C. O. Lee:

H. L. Tisher—"A Study of Precipitation of Fluidextract of Uva Ursi. I. The Crystalline Nature of the Precipitate."

J. E. Bell—"A Study of Precipitation of Fluidextract of Uva Ursi. II. The Effect of Heat and Selective Solvents upon the Formation of a Precipitate in Fluidextract of Uva Ursi."

L. M. Parks—"The Identification of the Crystalline Precipitate in Fluidextract of Uva Ursi. III."

L. M. Parks—"The Cause and Prevention of the Crystalline Precipitate in Fluidextract of Uva Ursi. IV."

K. L. Kaufman—"A Study of the Precipitation in Fluidextract of Senna I. A Comparative Study of the Official Formulas."

K. L. Kaufman—"A Study of the Precipitation in Fluidextract of Senna II. The Effects of Light, Temperature and Various Other Physical Factors upon Fluidextract of Senna."

K. L. Kaufman—"A Study of the Precipitation in Fluidextract of Senna III. Precipitation in Fluidextract of Senna Minimized by Means of Sodium Borate."

K. L. Kaufman—"A Study of the Precipitation in Fluidextract of Senna IV. The Nature and Character of the Precipitate Which Forms in Fluidextract of Senna."

S. Hauge and K. L. Kaufman—"A Study of the Precipitation in Fluidextract of Senna V. A Bioassay Technique for Determining the Cathartic Value of Fluidextract of Senna and Other Liquid Cathartics."

William J. Husa inquired relative to the length of time it took for the precipitate to appear. The general reply was that the precipitate would begin to appear very soon and precipitation continued for a long time.

John C. Krantz, Jr., inquired whether the addition of sodium hydroxide had been tried to prevent the precipitation in fluidextract of senna.

Mr. Kaufman had found that it does not act satisfactorily.

"Preparation of Divinyl Ether," by W. A. Lott and W. G. Christiansen. Read by the latter.

G. A. Bergy inquired relative to the use of Divinyl Ether.

W. G. Christiansen replied that it is a good inhalation anesthetic, but there are certain limitations to it. It is more satisfactory in short operations than in long ones. Regarding its safety—that depended on the operator. They were working on cyclopropane, because they considered this more satisfactory.

Second Vice-Chairman Justus C. Ward took the chair.

"The Use of Cetyl Alcohol as an Enteric Coating Material," by Lucille M. Mills.

W. J. Husa asked how efficiency was calculated. It seemed to him there was only a small proportion of cetyl alcohol-mastic disintegrated, but the efficiency was given at about 97 per cent.

The author stated that the total number of tablets, disintegrated in the stomach, was disregarded and those that do not pass, and the efficiency figured on those that had passed through the stomach in whole or in the disintegrated form.

T. H. Rider inquired whether the author had any figures on the insolubility of cetyl alcohol in alkali. She replied in the negative.

"Experiments with a New Suppository Base," by John C. Bird.

W. J. Husa asked how this compound was selected.

The author was first led to choose this base because of the recent development of the self-emulsifying creams that are on the market. Those points are discussed in the original paper. He said: "The trouble with the glycerol esters, apart from the propyl esters, is that the melting point is too high, between 75 and 80. This is the only one I found within the range of the body temperature, between 25 to 27."

"The Hydrolysis of Menthyl Acetate and of Acetylized Peppermint Oil," by L. H. Baldinger.

The Second Session of the Scientific Section was adjourned.

THIRD SESSION.

The Third Session of the Scientific Section of the AMERICAN PHARMACEUTICAL ASSOCIATION was convened August 28th at 9:15 A.M. by Chairman H. M. Burlage.

The reading of papers was continued; the first paper—"A Study of Methylenedisulfonic Acid and Its Derivatives," by John C. Bauer and Glenn L. Jenkins, was read by Glenn L. Jenkins. (Discussion will have to be deferred until paper is published.)

A series of three papers was presented by E. V. Lynn.

E. V. Lynn and F. J. DeSantis—"American Mistletoe."

E. V. Lynn and C. J. Monarca—"Acorns of Quercus Rubra."

E. V. Lynn and K. E. Larsen—"The Bark of American Larch." (Discussion will be published with the paper.)

A series of three papers was presented by R. A. Cain:

R. A. Cain and Carl H. Johnson—"The Leaf Oil of Douglas Fir."

R. A. Cain and Carl H. Johnson—"The Bark Oil of Douglas Fir."

R. A. Cain and Carl H. Johnson—"The Wood Oil of Douglas Fir." (Discussion will be published with the papers.)

"The Pharmacognosy of the Anterior and Posterior Pituitary of Cattle," by Heber W. Youngken. (No discussion.)

F. E. Bibbins took the chair.

Henry M. Burlage presented the paper prepared by himself and H. Dale Roth entitled, "Chrysopsis Graminifolia—A Preliminary Study," by Henry M. Burlage and H. Dale Roth. (No discussion.)

Chairman Burlage resumed the chair.

"Investigation of the Fruits of Sambucus Calicarpa," by Richard H. Cook and Forest J. Goodrich. Read by title.

"The Chemical Nature of Iodobismuthic Acid and Its Relation to the Chemistry of the Alkali Iodide Compounds of Bismuth Iodide," by A. E. Jurist and W. G. Christiansen. Presented by the latter. (Discussion will be published with the paper.)

"New Iodine-Bile Compounds (Iodocholeates): Their Physical and Chemical Properties, Germicidal and Pharmacologic Action," by P. Goedrich. (Discussion will be published with the paper.)

The following papers from the Laboratory of Edward Kremers were read by title:

"The Mondardas, an Attempt at a Chemical Characterization," by C. C. Albers and Edward Kremers; "The Volatile Oil of Juniperus Mexicana," by Nevada Windemuth and Edward Kremers; "A Phytochemical Study of Ceanothus Americanus," by Arthur Schuck and Edward Kremers; "A Phytochemical Study of Gnaphalium Obtusifolium," by Paul Jannke and Edward Kremers; "A Phytochemical Study of Nepeta Cataria," by Minnie Meyer and Edward Kremers; "A Phytochemical Study of the Leaves of Celastrus Scandens," by Helen Ernst and Edward Kremers; "A Study of Shikimic Acid and Drugs Containing it," by H. H. Lei and Edward Kremers; "The Preparation of 1-*beta*-Thujone," by C. C. Albers and Edward Kremers.

"The Effects of Individual Environment Factors of the Chemical Constituents of Plants," by Noel Moore Ferguson. (Author absent.)

"Selenium in Type Vegetation," by O. A. Beath. Read by title.

The next two papers were read by title:

"A Study of Several Species of the Genus Monarda," by B. V. Christensen and R. S. Justice, and "A Comparative Study of the Pharmacological Action of Natural and Synthetic Camphor," by B. V. Christensen and H. J. Lynch.

"A Study of Solution of Magnesium Citrate," by Arthur Osol and L. F. Tice. Read by the former. (Discussion of this and next paper will be published with the papers.)

Arthur Osol presented the paper "Magnesium Magma Heavy Metals Test."

"Taste Tests IV. Relative Bitterness," by Frederick M. Scholl and James C. Munch. Presented by the latter. (No discussion.)

The following four papers were presented by Arno Viehoever:

Arno Viehoever, H. Mack and A. Koff—"Bio-Chemistry of May-Apple."

"Vital Substances as Medicine," by Arno Viehoever.

Arno Viehoever and R. Gilbert—"Wintergreen Oil as a Poison."

Arno Viehoever and L. K. Lung—"Common and Oriental Cardamoms."

(Discussions will be published with the papers.)

The report of the Committee on the Chairman's Address was called for; presented by J. C. Krantz, Jr., it follows:

REPORT OF THE COMMITTEE ON THE CHAIRMAN'S ADDRESS, SCIENTIFIC SECTION.

"1. The Committee wishes to compliment the officers of the section for the excellent papers secured for this meeting of the section and also for the promptness and dispatch with which the meeting was conducted."—Adopted.

"2. The Committee concurs in the first recommendation in the Chairman's address, *i. e.*, that only such papers that have been presented before it and/or passed by the Board of Review of Papers be published under the heading of 'Scientific Section' in the JOURNAL."—Adopted.

"3. The Committee concurs in the second recommendation in the Chairman's Address, *i. e.*, that no paper be published in the 'Scientific Section' of the JOURNAL unless approved by the Board of Review."—Adopted.

"4. The Committee feels that the recommendation of the Chairman to give publication priority to papers which are read by the author, over those which are read by title, would be unwise. The committee feels that the timeliness of the subject should be the determining factor in publication priority."—Committee's report adopted.

"5. The Committee concurs in the recommendation of the Chairman that papers submitted by authors other than ASSOCIATION members should be given special scrutiny by the Board of Review."—Adopted.

Chairman Krantz submitted: "Perhaps this sixth resolution requires a word of explanation. In the Chairman's Address, there was a recommendation to the effect that the Scientific Section should make a careful study of the papers and the character of the papers to be presented before it. In view of this recommendation in the Chairman's Address, the Committee on Chairman's Address offers the following resolution:

"6. The Committee recommends that the incoming Chairman appoint a committee of three, one of whom is the editor of the JOURNAL, to study the policy of priority recommended in the Chairman's Address, and to report to the section at its next annual meeting."—Committee's Report adopted.

Chairman Krantz submitted: "This next resolution is the recommendation of the Committee on Resolutions and the Committee on Chairman's Address, in response to the resolution offered by Dr. Munch at the first meeting of this Section."

"7. The Committee agrees in principle with the resolution offered by Dr. Munch to limit each author to one paper and, should the necessity arise, feels that such action should be taken. At present, however, the Committee feels that the action is not necessary and would not be in the best interests of the ASSOCIATION."

Abstract of discussion follows.

James C. Munch: "We have had ninety papers offered. In analyzing those, one-third came from seven authors. Approximately one-third were read by title, which left one-third of the papers to congest the program.

"What I had in mind was to get some constructive thought directed toward some method by which papers that are to be offered only by title shall be so designated on the program, and that some possibility can be considered for discussion of papers to be presented."

Secretary Bibbins explained that some of the authors could not come after saying they would; others are here who thought they could not come which accounts for the changes to some extent.

(Further discussion.)

After re-reading the report of Chairman Krantz, the report was adopted.

Chairman Burlage resumed the chair.

John C. Krantz stated that one gets a better insight into the presentation of the paper if he knows the laboratory in which the man is working. "Would it be possible to place this on the program, along with the title of the paper, the laboratory in which the man is working or in the abstracts, whichever seems to be the more desirable?"

Secretary Bibbins thought it might look like advertising.

Dr. Krantz said this is handled in other societies by simply mentioning the name of the city.

Secretary Bibbins said the city would be all right.

Chairman Burlage thought the suggestion a good one.

George D. Beal suggested an index with names.

(This ended the discussion.)

G. F. Reddish said he would probably be out of order on the matter of unfinished business, but there is some unfinished scientific business that is about ten years' old. He had reference to the work of U. S. P. and N. F. on ointments. He suggested that these studies be continued.

F. E. Bibbins took the chair.

Report of the Nominating Committee:

The Committee selects the following nominees for officers of the Scientific Section of the AMERICAN PHARMACEUTICAL ASSOCIATION for the coming year: *Chairman*, G. L. Jenkins; *First Vice-Chairman*, B. V. Christensen; *Second Vice-Chairman*, J. C. Ward; *Delegate to the House of Delegates*, H. M. Burlage.

On motion duly seconded the nominees were duly elected.

The officers-elect were duly installed and on motion duly seconded the Section adjourned.

THE JOINT SESSION OF THE SCIENTIFIC SECTION AND THE SECTION ON PRACTICAL PHARMACY AND DISPENSING.

The Joint Session of the Scientific Section and the Section on Practical Pharmacy and Dispensing was called to order Thursday, August 27th, by Chairman H. M. Burlage of the Scientific Section. Secretary Leon W. Richards of the Section on Practical Pharmacy and Dispensing presided as co-chairman. The latter presented the report of the Committee on Collection of Information Pertaining to Professional Pharmacy, by Marvin J. Andrews. (To be published; see also Chairman Rising's Address.)

The report on the U. S. P. was called for but owing to the absence of Chairman Cook, Chairman Burlage called on Chairman E. N. Gathercoal, who made a verbal report. (The notes have been referred to Chairman Gathercoal; to be published later.)

Other reports were made by the Chairman, see October JOURNAL, pages 901, 906–908. (See Chairman Cook's report in October JOURNAL, pages 896–901.)

Second Vice-Chairman, H. A. K. Whitney, took the chair. He called attention to the Recipe Book Exhibit prepared by the Chairman, J. Leon Lascoff.

The report of the Committee on Ebert Prize was presented. It follows:

REPORT OF COMMITTEE ON EBERT PRIZE.

It is the unanimous opinion of this committee that some pointed references should be made as to the conditions in which manuscripts come into the hands of the committee. Some papers are third or fourth carbons on onionskin paper, and therefore, practically illegible. Others are a disgrace to the ASSOCIATION because of poor mechanical construction or more particularly through very careless use of the English language. It is our belief that the committee has the right and should refuse to consider an illegible manuscript and further, that the composition of a paper should likewise be held to be an important consideration in judging its merit.

This committee recommends that this matter be referred to the Scientific Section for consideration and action.

As to the Ebert Prize, your committee is in unanimous accord in the selection of papers for this award. These papers deal with Improved Methods and in the judgment of the committee are of sufficient merit to justify the award. Your committee, therefore, recommends that the Ebert Prize be awarded to Dr. Glenn L. Jenkins and Mr. Charles F. Bruening for two papers on "The Assay of Hypophosphites" as representing the best written contribution submitted to the Scientific Section of the AMERICAN PHARMACEUTICAL ASSOCIATION and as appear in published form in the JOUR. A. PH. A., volume XXV, pages 19 and 491.

Respectfully submitted,
H. A. LANGENHAN
GEORGE D. BEAL
B. V. CHRISTENSEN, *Chairman*.

The report of the Committee on Prescription Tolerances was called for. This was presented in House of Delegates, page 944.

There being no further business, the Joint Session was adjourned.

SECTION ON PRACTICAL PHARMACY AND DISPENSING.

The First Session of the Section on Practical Pharmacy and Dispensing was called to order by Chairman L. W. Rising at 9:00 o'clock Thursday, August 27th. Chairman Rising presented his address; it follows.

ADDRESS OF THE CHAIRMAN.

BY L. W. RISING.

Custom decrees that annually the chairman of each section of the AMERICAN PHARMACEUTICAL ASSOCIATION open the activities of his division with a few remarks regarding some phase of pharmacy. In casting about for an appropriate subject on which to base my own talk, I consulted a number of the leaders in the profession. It is significant that they were unanimous in pointing out that attention should be paid to the attempt on the part of many retail pharmacists to once more professionalize their businesses. There is an undeniably important trend toward a schism in the ranks of the retailers which will eventually result in a large class of pharmacists doing strictly a professional business. This trend has been predicted for many years and actually began during the depression when it was found that those stores whose business was in large measure based upon the filling of prescriptions and distribution of sick-room supplies suffered less than did the ordinary pharmacies. Because so many pharmacists have discovered that their economic salvation lies in truly pharmaceutical activities, the problems of professional pharmacy assume a new and broader significance.

It is with these newer problems that the men whom I interrogated felt this section must deal. Certainly that is one of our major functions. Not all of them can be taken up at once, however, and none of them can be solved by simple discussion in our annual gatherings. We must go farther than words if we are to fulfil our obligations to pharmacy. The mere fact that the section at some time or another has considered certain important problems of professional pharmacy does not mean that the discussions will be taken up after the convention and followed through to satisfactory conclusions. Too often the many good things initiated by the section die almost before they are born because of the lack of adequate machinery with which to follow them throughout the year after those who are responsible for their beginnings have scattered to the four corners of the nation. The section has at times been remiss here and should undertake to remedy the condition. Dr. R. P. Fischelis points out one of the deficiencies in this connection. There are local, state and national organizations endeavoring to promote professional business through publicizing the U. S. P. and N. F. and through other means. The Section on Practical Pharmacy and Dispensing has each year attempted to carry on its own share of this work. There is no correlation between these individual endeavors which would mold all into a single effective national unit. Certainly from the point of view of efficiency, coördinated activity is to be highly desired. This section two years ago took a step in the proper direction when it formed the Committee for the Collection of Information Pertaining to Professional Pharmacy. The purpose of the committee was to collect all the available material used by any organization intimately connected with professional pharmacy in the furtherance of its activities. For two years the committee has been working and should by now have considerable valuable data. However, for the lack of planned machinery to coördinate this work with that of the parent society, it has not been effectively used. I therefore recommend that the section call to the attention of the parent body this material, pointing out that it is constantly increasing, and urge that facilities be made available at the AMERICAN INSTITUTE of PHARMACY for its study. As a result of the study, there could be published periodically summaries of all activity of these various agencies. Possession of this correlated knowledge would make it easy and logical for the AMERICAN PHARMACEUTICAL ASSOCIATION to initiate and direct a coördinated program for the publicizing and development of professional pharmacy.

In order to further insure the permanence of the thoughts and discussion developed here, I urge that each member of this section contact the leading pharmacists of his own district and informally talk over our work. These men should be asked to contribute for subsequent conventions papers based on their own experiences in solving the problems of professional pharmacy. Coöperative effort of this sort should accomplish several things: It should carry the work of the section to many whose interests it serves but who are not ordinarily made acquainted with it, these later discussions will frequently bring to light important local pharmaceutical issues or trend which should be brought to the attention of the section, and increased interest in the work of the AMERICAN PHARMACEUTICAL ASSOCIATION with a consequent enlargement in its effectiveness should result.

I wish to thank publicly the secretary and other officers of the section for their efforts in organizing this program. I also wish to thank those who have contributed papers for the time and energy they have so unselfishly given in the interests of professional pharmacy.

The report was accepted.

Verbal report of the Secretary was presented and accepted.

The reading of papers follows. When no discussions are given, they will accompany the papers. The following were presented: "Is Dispensing and Preparation of Medicinal Substances a Lost Art?" by Max Lemberger; "Sterile Fluids for the Hospitals and the Pharmacist," by Evelyn Gray Scott; "Pharmacist and Physician," by Ella Paquin; "The Teaching of Manufacturing Pharmacy," by Dr. H. G. DeKay; "The Study of Glycerin Suppositories," by William A. Prout; "A Uniform Schedule for Prescription Pricing in South Dakota," by Clark T. Eidsmoe.

J. Leon Lascoff asked relative to compounding fees. (The prices are brought out in the paper to be published.)

"Pharmacy in Prison," by Charles L. Pickens.

Joseph P. Murray asked about the average age of the present inmates. The author replied that they are anywhere from eighteen to eighty years.

"What Type of Prescription and How Many to Be Given at Board of Pharmacy Practical Examination," by J. Leon Lascoff. This paper was published in the October issue, page 870.

"It Can Be Done, Series Five," J. Leon Lascoff.

"The Establishment and Operation of an Open-All-Night Policy in a Retail Pharmacy," by Robert Elich.

"The Clinic Pharmacy," by Josephine Nichols.

"Some Observations on the Preparation of Intravenous Solutions in the Hospital Pharmacy," by H. C. McAllister and Henry M. Burlage.—This paper is published in the September JOURNAL, page 756.

It was moved by J. M. Dille, duly seconded and carried that "papers which contain secret material be not acceptable for presentation in the Section on Practical Pharmacy and Dispensing."

The First Session of the Section on Practical Pharmacy and Dispensing was then adjourned.

Members were invited to inspect the A. PH. A. Recipe Book preparations.

SECOND SESSION.

The Second Session of the Section on Practical Pharmacy and Dispensing was convened at 9:00 o'clock, August 28th, by Chairman L. W. Rising.

The reading of papers was continued:

"Malpractice of Pharmacy," by E. J. Parr.

"A Greater Knowledge of Pharmacology Is Essential to a Professional Pharmacist," by A. O. Mickelsen.

The author of the paper preceded the reading of the paper by referring to some experiences, one an exhibit at the North Western Medical Association in which he took up the study of mineral oil and petrolatum. He found the medical men eager for the information. He also referred to a number of preparations on the market that were advertised as a panacea for all ills. He stated also that he found that some pharmacists were studying pharmacology and in that way they are able to give information to the doctors.

The author had the pleasure of giving an exhibit at the Pacific Northwest Medical Association and the entire exhibit was on white mineral oil and petrolatum and the doctors were eager to get information regarding mineral oil. Some of them had simply been prescribing mineral oil. He referred also to the prescribing of advertised products without knowledge of them. He was pleased to note that some physicians and pharmacists were studying the pharmacology of preparations.

H. A. K. Whitney agreed with Dean Mickelsen and said that schools should teach pharmacology with a background of physiology.

C. O. Lee stated that pharmacists should go into experimental pharmacology and do work of this kind for the physician.

Wm. J. Husa agreed with the author of the paper, that pharmacy students should be prepared to advise the physician relative to the pharmacology of drugs.

Anton Hogstad, Jr., said that in his experience pharmacology entered into the activities of the pharmacist every day. He referred to several addresses he delivered a number of years ago on "Alkaloidal Chemistry," and in these discussions pharmacology had a very important part.

Chairman Rising referred to some work that was being done at the School he is connected with; he stated that a pharmacologist had been added to the faculty.

The next paper was on "Control of Specialties and Nostrums in Prescription Stock," by John F. McClosky.

R. E. Terry considered it the duty of the pharmacist to make such investigations. He referred to some of the work done by German pharmacists who must be in position to assay such products according to the requirements of the German Pharmacopœia.

Lawrence Templeton stated that in his opinion the action of the Illinois Emergency Relief Commission was of great value. With only a very few exceptions the prescriptions are to be written by the doctors for U. S. P. and N. F. items. When the pharmacists refused to fill prescriptions for proprietaries the patients complained to the doctors, but this was corrected when it was found that the pharmacists would comply with the specifications. They have noticed a decrease in the number of prescriptions for proprietaries.

The reading of papers was continued:

"The Preliminary Study of Tincture of Cantharides," by Leslie M. Ohmart.

Wm. J. Husa remarked that the use of hydrochloric acid is important.

C. O. Lee asked whether the author of the paper had found a satisfactory assay for the tincture. He referred to the British assay. The author of the paper stated that this paper represented preliminary work.

The next paper of the program was "The Challenge of To-day," by Anton Hogstad, Jr. (Discussion will be embodied in the paper.)

Chairman Rising referred to the unusual opportunity Dr. Hogstad had in getting acquainted with pharmacists.

The next paper was entitled: "One Year of U. S. P. and N. F. Extension in Mississippi," by Charles E. Wilson. The paper was read by E. L. Hammond.

Marvin J. Andrews desired to compliment the author of the paper and the Mississippi State Board of Pharmacy. He had never used the cost compared with making and buying. He thought it was the duty of the physician to write the prescription for the patient using the official products and not worry about the cost. He also referred to the cards which accompanied the paper. They used the same one with some other information. In this, the physicians were asked relative to the work they are interested in, in the practice they specialized. Most physicians prefer to receive their information on 3 x 5 index cards.

The following papers were presented:

"A Ready Method for the Extemporaneous Preparation of Isotonic Collyria," by Morris Mellen and Leonard A. Seltzer. (Published in September JOURNAL, pages 759–763.)

"Hydrogenated Castor Oil as An Ointment Base," by George W. Fiero. (Published in October JOURNAL, page 862.)

"The Education of a Pharmacist," by Ernest T. Stuhr.

"New Practicalities in Pharmacy," by O. U. Sisson. (Published in October JOURNAL, page 863.)

"The Idealism of Pharmacy," by Sister M. Constance.

"The Teaching of Manufacturing Pharmacy," by H. G. DeKay.—Presented by C. O. Lee. He stated that an effort was made to outline manufacturing pharmacy in the institution with which he was connected.

"Compressing Gland Products into Tablets," by C. O. Lee. The author explained that the study resulted from an effort to supply tablets for a medical missionary in India. Formulas are given in the paper and the experimental data have been found valuable.

"Pharmacy from the Standpoint of Hospital Administration," by B. T. Howiler, presented by H. A. K. Whitney. The paper represents a résumé of experiences in the hospital.

The report of the Committee on Nominations was called for. The following names were presented and the nominees were duly elected.

Chairman, H. K. Whitney; *First Vice-Chairman*, Wm. J. Husa; *Second Vice-Chairman*, E. L. Hammond; *Secretary*, Leon W. Richards; *Delegate to the House of Delegates*, L. W. Rising; *Chairman of the Sub-Section on Hospital Pharmacy*, L. C. Zopf.

After installation of the officers the Section was adjourned.

Attention was called to the new sub-section on hospital pharmacy, that the work be encouraged. Chairman Rising requested that members keep the Section on Practical Pharmacy and Dispensing in mind for the preparation and submission of papers.

All papers of the Sections are referred, according to usual custom for review before publication. See Notice to Contributors, published periodically; a copy will be found in October JOURNAL, *page 962.*

INTERNATIONAL CONGRESS ON MILITARY MEDICINE AND PHARMACY.

Announcement has been made of the preliminary program for the Ninth International Congress on Military Medicine and Pharmacy, to be held, May 8 to 14, 1937, at Bucarest. The chief subjects to be treated will be the organization and functions of health services in military operations on land and sea; transportation, hospitalization and treatment of gassed and wounded; organization and functions of surgical services in motorized troops; usage of colorimetric methods in analysis in laboratories; dental cases in armies; definition, treatment, apparatus; comparative studies of food supplies for the healthy, and nourishment for the sick and injured in times of peace and war.

SECTION ON EDUCATION AND LEGISLATION.

The First Session of the Section on Education and Legislation of the A. PH. A. was convened on August 26th, at 3:00 P.M., by Chairman C. Leonard O'Connell.

The first order of business was the reading of the Chairman's Address. It follows:

REPORT OF THE CHAIRMAN.

BY C. LEONARD O'CONNELL.

The business of this session concerns itself with two of the most important phases of man's activity in pharmacy, namely, education and legislation. Perhaps an over-emphasis on the latter is a fairly reciprocal outgrowth of the under-emphasis upon the former.

Until recent years, the pharmacists as a class were not well educated formally, that is, in the commonly accepted meaning of the words. A formally trained college graduate was one who had the conventional four-year high school training followed by the accepted four-year course of undergraduate study in the field of distribution elected. In the case of the pharmacist, his abridged and intensive training of two years was, until recent years, superimposed upon an inadequate preliminary training. In other words, both his preparation for college and his actual college work had always been regarded as substandard in the sense that the education did not conform to accepted standards.

Having had, for the most part, but casual contact with educative procedure, and having had many experiences with legislative procedure in the form chiefly of restrictions placed upon him, it is perhaps a natural thing for the pharmacist to look to legislation rather than to education for a remedy. In America it is still fashionable in pharmaceutical circles to subscribe to the doctrine that by some form of legislative enactment, we may legislate the independent retail pharmacist into a competence. Even a causal knowledge of economic principles compels admission that the economic problem of the small retailer does not lend itself to legislative solution.

Granting the small dealer's right to fair competitive codes in which large scale operators should be restrained from exercising unfair advantage due to their great size and wealth, it is still difficult to see how we may justly extend this by visiting punitive restrictions upon certain economic groups. If in theory all men are equal under the law it is difficult to see how legislation aimed to harass or impede certain groups can be justified.

Too often the appeals to the small retailer for support in view of proposed legislation designed to cure economic ills have been to the heart rather than to the head and since the appeals have for the most part been successful, the response has been emotional with a feeling tone out of all proportion to the factors involved. What our legislative programs need essentially is less heat and more cold reasonable appraisal of the facts at hand.

Small retailers, as a class, *in se*, do not receive, nor should they receive any unusual consideration from legislative groups. They are engaged in a business activity that is subject to economic principles and in order to justify their existences and earn livelihoods, they must conduct their businesses efficiently. To attempt to impede others, rather than to improve themselves is to reverse the order of customary procedure.

An individual needs be neither a philosopher nor an economist to recognize that a buying public has little immediate or remote concern with the problem of any group of distributors. The buying public is interested in obtaining customary merchandise of acceptable quality at advantageous prices. Dealers are interested in selling such merchandise at a greater or lesser profit in terms of existing competition.

Granting the unethical and uneconomic nature of "deep cut rate" and "football merchandising," we shall probably find that the animus aimed at the so-called "chiseling group" may come back to plague us if we act emotionally rather than rationally.

Recent investigation aimed to bring out in the open secret rebates and unfair concessions to large dealers is a step in the direction of giving an educational flavor to legislative procedure. Let us dedicate ourselves to the task of rooting out unfair practices but let us not stultify ourselves by seeking favors and exemptions for any group however large or small.

Vice-Chairman Schicks stated that he would not present an address but desired to take the opportunity to compliment the efficient Secretary for the splendid work that he has done in rounding up the program. He expressed appreciation of the remarks made by Chairman O'Connell.

Secretary George A. Moulton desired to bring action into the meeting and not a lengthy report. "The past year has removed from the membership many friends and I refer particularly to a former *Honorary President* of the ASSOCIATION, Prof. Eli H. LaPierre.

"Oscar E. Russell in his report to this Section of last year recommended that more time and thought be devoted to legislation, and with this in mind the program herewith is presented. He desired to thank those who had prepared papers and those who had made contacts possible for securing papers."

The secretary's report was accepted.

Chairman Roy B. Cook of the House of Delegates was the first speaker of the session. He made some observations on legislation.

The succeeding speaker was W. Mac Childs, President of the N. A. B. P. (He generalized on conditions in pharmacy, education and legislation.)

Charles W. Ballard was much interested in the suggestions made by the speaker about clinical laboratory work. In the Metropolitan District of the City of New York this work has been taken over by the Health Department. Clinical analyses cannot be undertaken except in laboratories licensed by the Health Department. Among those eligible for these licenses are those with degrees showing qualifications for the work.

There is a movement to extend this work throughout the state and provide a course for laboratory technicians and clinical workers. The course is ambitious in that it extends over four years.

H. Evert Kendig stated that after quite thorough investigation, conducted a few years ago on the possibility of offering courses in Clinical Analyses, in Temple University, it was decided at first that a regular course could not be given because of the lack of hours in which to prepare the student for this work and the conclusion was also reached in his mind that it is doubtful whether it is possible for a School of Pharmacy to set up special courses which give a satisfactory training as a technician unless that school is next door to a closely connected hospital.

"It is of no great value to give a student clinical analysis, because he does not learn anything from that except the technique of it. To make the course of value and to prepare the student to produce a report which will be acceptable to the physician, he must have gone over hundreds and hundreds of specimens of urine. The sample applies to blood work. He must have the pathological blood, not the normal blood, so that when he looks into the microscope, when he makes a test he will recognize whatever it may be that gives rise to the diseased condition.

"The physician will not accept the findings of the man who is not trained in the study of the pathological specimens. He depends upon the report he receives from the laboratory for his diagnosis. He sends the specimens there and these come back with the report on which he bases his diagnosis and his treatment, and he will not be warranted in so doing unless the work has been done by a man trained in pathological specimens. A report that is in the interest of public health cannot be made otherwise.

He did not believe, at the present time, unless the College of Pharmacy is very closely situated to a hospital, from which the pathological specimens are obtained, that it is possible to train a man in this work in a manner so that his findings will be accepted by the physician.

Mr. Childs stated that the Colleges of Pharmacy are impractical in some respects. They do not give full value to the man for the time he spends in the school so that he can go outside of the Institution and use it. Some of these clinical laboratories are perhaps too scientific. They go into the cultural scientific program to an extent that it would require seven or eight years in school to get results. The student who has ability can complete studies that he can make use of in less time. He referred to a school of laboratory technique in St. Louis that gives these laboratory courses and the students become successful in the work. He was of the opinion, that if this school can turn out efficient students, Schools of Pharmacy can do likewise.

J. Leon Lascoff requested Dr. C. W. Ballard to speak in this connection. He said that the institution with which he is connected gives extension courses in Urinalysis, Blood Analysis and other clinical work, but these are extension courses. The students who come to the school for such a course come for what Dean Kendig would call the theoretical side.

George C. Schicks stated that it is well to remember that the scientific articles in the JOURNAL OF THE A. PH. A. that are based on pharmacy, even though some of the readers cannot comprehend the full meaning, are valuable contributions to be made use of. He thought that such a standing of the JOURNAL is necessary for the ASSOCIATION. He thought perhaps the work of bringing a uniform effort to promote the interests of pharmacy should be extended.

He had in mind that it is possible for practicing pharmacists to be in better position to compete with commercial houses if they have the proper information presented to them through some source, that they are responsible, capable individuals and that when information is obtained from them it is authentic. He referred also to reports of the Council on Pharmacy and Chemistry of the American Medical Association which are sources of valuable information and likewise the Council on Dental Therapeutics of the American Dental Association, which is constantly instructing its members as to what to do, how to write prescriptions, what to write for, and we should have a somewhat similar organization in pharmacy. He thought that a laboratory located in the AMERICAN INSTITUTE OF PHARMACY with capable men, could bring related information to pharmacists. Pharmacists could then say, "We want competition, not unfairly but fairly. We are going to meet you on your own plane."

Mr. Childs thought perhaps he had been misunderstood to a certain extent. He was neither criticizing the schools of Pharmacy nor the AMERICAN PHARMACEUTICAL ASSOCIATION. The ASSOCIATION has done wonderful things and he would not take away any praise nor any work that the ASSOCIATION is promoting. He thought that the JOURNAL should contain pages of formulas and practical suggestions for the professional pharmacist, outside of that which is given in the papers by the authors.

Dean Kendig hoped that Mr. Child's interesting remarks would be prepared for publication.

The next paper called for was that by Paul C. Olsen on the Robinson-Patman Bill. It follows:

THE ROBINSON-PATMAN ACT.

BY PAUL C. OLSEN.

This new law which was signed by President Roosevelt in June 1936, has been the subject of extensive discussion and controversy both during and since its passage. Indeed, in a paper of a length suitable for this meeting, it would be impossible even to enumerate all of the different analyses and discussions of the Robinson-Patman Act which have been published. One of the latest of these analyses contains over 25,000 words!

The Robinson-Patman Act, among the numerous names which it bears, is called the "Anti-Discrimination Act." No one questions the desirability, nor the equity of removing by law discriminations in trade. The question in this respect about the Robinson-Patman Act is simply whether it will accomplish such a purpose.

It will be recalled that in the extensive discussions which preceded the approval of various codes under the National Recovery Administration, the code hearings were used by various interests as a means of bringing forward every conceivable trade grievance which ever existed. Proposals were made at the code hearings, the real purpose of which was the imposition of restrictions upon competitors, rather than the establishment of standards of fair trade practices. For instance, the department store interests proposed to prohibit the evening and Sunday sale in drug stores of everything except strictly medicinal items. Retail drug interests proposed price fixing regulations which would have had the effect of guaranteeing profits in their branch of retailing.

When I bring up the matter of price fixing in the retail drug trade, I realize that many pharmacists sincerely and, certainly persistently, advocate such proposals. Without taking a personal stand one way or the other, I simply want to emphasize that, if legislation could be enacted which would fix price levels in retail drug stores at the minimum levels which are sometimes proposed, the effect of the resulting guarantee of profits would be such a multiplication of drug stores that the competition for business would be far more intensive than it is now.

The same thing is true about the Robinson-Patman Act. If the ultimate effect of this Act is to hobble one form of competition for the benefit of another, the result is bound to be a multiplication of proprietors in the field which benefits from the restriction. Thus its effect is not to lessen competition, but to change it to another direction and to intensify it.

The analyses of the prospective effects of the Robinson-Patman bill have been so extensive and lengthy that merely to enumerate them would be a tiresome task, let alone to discuss them. The conclusion one reaches when one sees all of this analytical literature is that the ultimate effects of the law are certainly confusing and uncertain. Another conclusion, repeatedly expressed, is that the methods of cure that would have to be followed in the full and complete enforcement of the Robinson-Patman Act might be worse in their effects than the conditions it is designed to eradicate.

The existing confusion and uncertainty about the meaning and effect of the Robinson-Patman Act is, in my opinion, a grave danger. Fraught with the most peril is the law which is so difficult to enforce that it becomes a dead letter. When a law becomes a dead letter, it has the effect not only of lessening respect for that law, but for all law. That is a serious condition.

Even if optimistic answers now or soon can be supplied for the uncertainties expressed above, it still must not be forgotten that the effects of the Robinson-Patman Act certainly will not be to create any less competition for drug stores than they have now. Competition may be in different forms and directions, but it will be no less in quantity or quality. That is the immutable force of economic law.

George A. Moulton stated that one of the smoke screens being used to surround the Robinson-Patman Bill is the creation of the idea that this bill is ineffective. He said that many phases of the bill, so far, had been gone over by capable constitutional lawyers who have said that the bill is practical and can be enforced. Naturally, if it can be crowded out by discussion of the individual points or picked apart, and have it stated that it is ineffective, and a sufficient number of people believe that, the bill may not work. He believed that the Robinson-Patman Bill was not intended to reduce the number of drug stores or competition, but it was intended to provide in the practice of pharmacy a means to obtain an honest living.

The Chairman appointed the following Committee on Nominations: Ralph W. Clark, Wisconsin; Henry Rivard, Rhode Island; Leslie Ohmart, Massachusetts.

The Session was adjourned and the Chairman announced that the next meeting would be held Friday morning.

SECOND SESSION.

The Second Session of the Section on Education and Legislation was convened by Chairman C. Leonard O'Connell on August 28th, at 9:30 A.M.

The first paper was presented by Lyman H. Kebler on "Physicians' Prescriptions, Doctors and Druggists under the National Food and Drug Act, and Various Food and Drug Bills Introduced in the United States Congress during a Third of a Century."

Joseph H. Goodness thought there were two statements which can't be supported. One was that he thought that carrying the prescription over a state line created a question of interstate commerce.

He said, "the Supreme Court of the United States has held that contracts of insurance interstate are not interstate commerce, and this would seem to parallel that situation very closely. Therefore, he could not exactly agree with that, although the Supreme Court would have the final say."

"Dr. Kebler said 'the physicians' prescription was not specifically excluded from the act; therefore, he implied that they were included. That doesn't happen to be the interpretation of the law. The mere fact that something is not specifically excluded doesn't include it. So perhaps that, too, would be a legal question which could not be answered finally until the Supreme Court has had its say."

The author replied: "On those questions, we receive many inquiries regarding the status of physicians' prescriptions before the law actually became operative. I wrote what we call a food inspection decision on the subject, and we covered exactly the point made, namely, that unless it is a regular article of commerce, a private prescription, it will not be construed as a commercial transaction and, therefore, does not come under the law. That is the way we interpreted it that time. We do not know, of course, what the Court might say. I said, in the introduction to my paper, in reference to the first point, that there was a difference of opinion among the attor-

neys as to whether the Federal Food and Drugs Act covered physicians' prescriptions or not. That is probably going to be fought out in the District sooner or later."

The next paper was "Legislative Weather-Vanes," by R. L. Swain. The paper is published in the September JOURNAL, page 794.

Abstract of discussion follows.

H. Evert Kendig inquired if there was opposition on the part of manufacturers to the legislation and whether advantages resulted.

Dr. Swain stated that the drug trade interests were conferred with and they put their stamp of approval on the legislation and helped to get it passed.

Relative to advantages gained, the author of the paper pointed out a number of important improvements that have come about. In one instance, the building and the employees showed the evidence of improved conditions and the manufacturing operations are entirely in charge of a registered pharmacist. In another, cleaning and painting has been done.

Dr. Swain stated that he spoke before the General Federation of Womens Clubs and a Teacher's Group at the State Normal College.

The Maryland Club Woman featured an article prepared by him for this publication. It was very helpful in building up a proper appreciation. *The Baltimore Sun* sent two men who spent two afternoons with him, getting information for a feature article. He had given them the facts and some of the evidence, but they gave their own interpretation in the article. He thought it was probably the best effort in making the public conscious of the situation and their part in it. If the public is given what it needs, as far as pharmacy is concerned, the best interests of pharmacy are served.

W. F. Rudd pointed to the similarity in this work of Virginia and Maryland.

The question was asked, how the sale of poisons was controlled in paint shops and grocery stores, such as ammonia, muriatic acid and the like? Dr. Swain stated that Maryland's first Poison Act dated back to 1904. Laws of various states were studied and collected and also those of Great Britain, which he considered the best of all. These laws were checked with Dr. DuMez and a poison law background was built up and some points that stressed the Public Health angle were added. He referred to dinitrophenol on which only a few states had legislation, requiring the preparation to be labeled "poison." In most states there was no regulation. Louisiana required that the sales be restricted to the physicians' prescriptions. That same restriction is in the Maryland law. The Maryland Board of Pharmacy is authorized by act to add to the list of poisons. In certain rural communities the Board of Health is authorized to issue permits to rural dealers. Among the poisons authorized are such items as bichloride of mercury tablets in bottles of six; so-called white carbolic acid and so-called crude carbolic acid, in certain quantities; and the dealer must meet all provisions of the law. This part of the law is aimed to regulate only the sale of household poisons. Agricultural poisons are handled in the same way. The law will probably become stricter.

Lyman F. Kebler was very much interested in Dr. Swain's work and this line of legislation. He thought it was wrong to place the power for such legislation in the hands of the Federal Government; the states should take care of their own business. He referred to Food and Drug Legislation and his participation in it and also to legislation in various states regarding certain phases, including that on citrus fruits.

The next paper was entitled, "Requirements for Entrance to the Pharmacy Courses," by H. C. Christensen. The paper is to be published with abstract of discussion in a succeeding issue. (As a matter of record the names of participants in the discussion are given: C. W. Ballard, R. L. Swain, R. A. Lyman, W. F. Rudd, Mrs. L. H. Bowen and the author.)

The next paper of the program was "Some Important Obligations and Responsibilities of the College of Pharmacy," by Ernest Little. (Discussions follow the paper in this issue of the JOURNAL.)

The next paper was "Professional Pharmacy in National Legislation," by E. F. Kelly.

The author preceded his paper by the following comment:

When Mr. Moulton asked me to take part in this program, I assumed that he wished me to reflect fairly well in national legislation what I knew Dr. Swain would reflect in state legislation, because it has been my privilege to know a good deal about what has been done in that particular state and the attitude they take toward legislation.

"I regret, therefore, that the papers did not come in sequence but, in another way, I am

very glad, because some points were brought out in the discussion which illustrate exactly what he was trying to emphasize in legislation and what I hope to say.

"May I add also that in this discussion of education and legislation, particularly as illustrated by Dr. Christensen's paper and also Dr. Little's, we see the necessity of recognizing that we must follow along professional lines in this work if we expect to be recognized as a professional group. I don't think we can ignore the course of action of any other public health profession, because if we go too far away from the accepted professional atmosphere, we are looked upon as a different group, which does not aid us. Of course, I don't think that means we have to accept everything that the other professions do, but I think we have to illustrate that our course of procedure is in line with the other public health groups.

"I repeat, all I can add to this discussion is to illustrate, as far as I can, that the same ideas and the same procedures are applicable to national legislation as to state legislation, with respect to these public health fields. I did not think that the Chairman expected me to discuss our legislative program for the year." The paper follows:

PROFESSIONAL PHARMACY IN NATIONAL LEGISLATION.

BY E. F. KELLY.

One of the distinguishing characteristics of a profession is a code of ethics which is voluntarily and generally observed. The earlier professional codes were more necessary, because there were no laws specifically referring to professional practice. The basis of these codes was good faith and the assumption of a measure of responsibility for the public welfare. The licensed position which the members of the public health professions now hold involves a corresponding responsibility to act in good faith with the public in connection with their health needs. Professional pharmacy has such a code, adopted by this ASSOCIATION at its first meeting and amended from time to time to meet changing conditions. It should occupy a prominent place in every pharmacy in this country.

The statement made above prefaces the expression of my opinion, which, no doubt, is yours—that professional pharmacy cannot proceed in its legislative efforts along lines that may be entirely suitable to other groups, even those in the drug industry. This opinion applies not only to the Congress but to every political subdivision. It is evident to me that to be accepted as a profession, pharmacy must act as a profession, and we are its representatives. Equally, I believe that business must act as business is expected to act in its legislative activities.

Although the acceptance on the part of professional pharmacy of the limitations referred is in a sense a restriction, it is also a great advantage because our efforts may be carried on entirely outside of the hurly-burly of other legislative procedures. If legislative leaders can be convinced that the proposed legislation is professional in character and to be so it must involve the public welfare, third support is assured.

My experience in state and national legislative efforts have convinced me that while professional pharmacy loses by this procedure, it eventually gains more than it loses. In my report as secretary, it was stated that this ASSOCIATION now has contact with many persons connected with the Federal government whom we almost always find to be interested in pharmacy and in protecting and promoting it when its needs are made known to them. It was also predicted that we will be drawn more and more into this field although I dislike very much to admit this, in opposing as well as in promoting legislation and this involves government by regulation.

The report of the Committee on Legislation at this meeting reviewed our legislative efforts during the year. A brief review of them may be helpful. The Food and Drugs Act, the bill to commission pharmacists in the Army, various measures to restrict the source of alcohol to grain and other proposals affecting alcohol, the proposal to consolidate the narcotic bureau and the alcohol tax unit under the Secret Service, the proposals affecting the Harrison Act and the proposed amendment to the pharmacy laws and the narcotic law of the District of Columbia. This may seem like a simple program until the wide scope of these proposals is understood.

Another phase is the increase in government by regulation. Necessarily, enforcement agencies must be given the right to issue regulations and many of these affect professional pharmacy. Contacts must be established and maintained, and at times the labor and time involved is proportional to that expended on the basic legislation. As an illustration, many regulations aimed at the control of beverage alcohol also affect its use in our professional practice. Almost without

exception, this result of regulations is unintentional and may be corrected if those responsible can be made to realize in time what the effect will be. Here, as with basic legislation, good faith is involved as well as the public interest of which we are the guardians within our field.

To act in good faith sometimes involves misunderstanding of our position. For instance, a member of Congress took me to task for our opposition to the measure proposing to consolidate the narcotic and alcohol tax unit under the Secret Service on the ground that a professional association should favor any proposal to strengthen narcotic control. My explanation was, that our desire to strengthen narcotic control was the very basis for our opposition. The present Narcotic Bureau is doing a splendid work and any interference, however well mentioned, is dangerous; furthermore, the proposed arrangement would tend to connect the legitimate use of narcotics with the illegitimate use of these dangerous substances. After he understood this point of view, his criticism was withdrawn.

It is my belief that professional pharmacy is on a sound basis in legislation just so long as it acts as a profession should, and is not carried away by ill-advised pressure. We have to call on many pharmacists for assistance and we appreciate the splendid response. It will help us if in contacts with the members of Congress, pharmacists will mention the ASSOCIATION and will impress upon them that any legislation promoted or proposed by our profession will be in good faith and candor, and will always be in the public interest as we see it.

Roy B. Cook inquired: "In this new set-up in the United States Army, what is the situation of the physician and the pharmacist being transferred from one state to another? For instance, we have one of the largest veterans' hospitals in the State of West Virginia. They send a physician in there from the District of Columbia. In the meantime they would ask our board to certify two registered pharmacists for Civil Service examination. They appoint one man out of that group, for that hospital. He is registered in our state. Suppose he is now commissioned and sent down to Fort Thomas, and they take the two physicians that work in their own particular department and transfer them to another state, do they have to re-register or transfer by reciprocity to the various states, or still go on in the government service absolutely distinct from any state contact?"

The author stated in answer to that question: "That is one of the topics we have up for consideration now. I am not able at this time to answer directly. I should say, that if transfer involved any public service, any service outside of strictly Army procedure—that is a matter we have to consider in the future with respect to the Army.

"In the hospitals there is an accepted condition that legal requirements do not apply in the same way that they apply to outside agencies. We went to the American Medical Association with the request that they do get requirements for licensing, that pharmacy must be conducted in accordance with the state act. I think it is quite doubtful that some of the state acts contemplate it. But you could require it.

"Let me make clear this effort as I understand it. The army is attempting to set up a somewhat different condition, a different situation, with respect to these men. They are trying to give their attention more decidedly to the purchase and standardization and distribution of supplies than any of the services rendered by pharmacists.

"I am not able to say directly whether the men would be required to register. They would certainly be eligible."

Mr. Cook inquired whether the National Board would reciprocate before they could serve in that state?

Dr. Kelly thought they would have to.

Secretary Christensen said: "If the status of registration is really worth it, it would depend on whether or not this pharmacist did work other than for the government. If he was entirely in the government service, I don't think there would be any need for consideration as to whether he was registered in the state or not. If he were in a hospital, for instance, where there was state work, or in a general hospital, then it would be a different proposition, but in the government service, where his work would be entirely under government supervision, I don't see any necessity for state registration other than his original registration."

The next paper, "An Adventure in Pharmaceutical Curriculum Construction," by H. C. Newton, was presented by E. V. Lynn. (No discussion.)

The next papers presented were:

"High School Grades and State Board Results," by H. Evert Kendig. (No discussion.)

"The Next Step," by W. F. Rudd. (Discussion will follow the paper when published.)

The three following papers were presented by title:

"A Novel Pharmaceutical Organization," by Oscar Loddy.

"Pharmacy's Position under Regulated Community Medicine," by P. J. Callaghan.

"Foundations for Successful Legislation," by George A. Moulton.

(The papers will be published in succeeding issues of the JOURNAL.)

The report of the Nominating Committee was read by W. M. Chase as follows: *Chairman*, George C. Schicks, New Jersey; *Vice-Chairman*, George A. Moulton, New Hampshire; *Secretary*, John F. McCloskey, Louisiana; *Delegate to the House of Delegates*, C. Leonard O'Connell, Pennsylvania.

There being no further nominations from the floor the nominees were elected in due order. Installation followed.

Chairman Schicks expressed his appreciation and invited the members to participate in next year's program. The meeting, on motion duly seconded, was adjourned.

SECTION ON COMMERCIAL INTERESTS.

The First Session of the Section on Commercial Interests of the AMERICAN PHARMACEUTICAL ASSOCIATION was called to order on August 26th, at 2:00 P.M., by Chairman Robert W. Rodman. He made brief remarks and advised that on account of other duties at the meeting it would be impossible for him to remain during the session. He requested Vice-Chairman R. T. Lakey to preside.

Secretary H. F. Hein made brief statements relative to the papers and other matter which would occupy the time of this Section.

Acting Chairman Lakey said there were no records available for the Section at the time and he called for the reading of the papers. The first one to be presented was: "Are Customers Price-Conscious?" by C. Leonard O'Connell. The latter was in attendance at another Section and the reading of the paper had to be deferred. (See pages 1001 and 1077.)

The next paper was on, "The Operation of the Connecticut 'Stop Loss' Drug Control Law," by Hugh Beirne.

He stated that the short time allowed him for the preparation of the paper, and absence from home, did not permit him to prepare a paper. The subject, however, had been very close to him for a number of years. Many times before, legislation of this kind was attempted with considerable discouragement, but it was decided that if such legislation could be passed it would fill a long-needed want in the economical distribution of drug items. The difficulties were largely due to the situation in the drug store systems which will probably now be cleared up by the Robinson-Patman Bill. He had been quite active on the Committee promoting that measure. The "Stop Law" legislation in the state of Connecticut has been in operation since July 1935. Fourteen states have passed State Fair Trade Laws. He was happy to predict that a National Labeling Act, which it is hoped to pass, will validate the Fair Trade acts on the statute books.

The druggists of Connecticut are living happily under the Connecticut "Stop Loss" Drug Control Law, so happy in fact that those who are interested in the promotion are frequently besieged by neighboring states who desire to participate in the benefits which this law has brought to Connecticut druggists. There has been only one litigation since January 1935. It was a charge which was *nolle prossed* with a provision of one-year probation to operate the law but it never went further than the lower court. This has never been considered in a superior court, but it is fairly evident that the law will stand up. The legislature adjourned on June 6th and the time from May 27th to adjournment, was short. The law became operative on July 31st and during that time there was extensive price cutting. Immediately after the law became effective, it was advised that this was a State law and the intention was to enforce it. It has been enforced and he believed that it represented the greatest benefit that has been received from this kind of legislation. He had talked to druggists in various groups and parts of the

State, and had found that the public was price conscious. He was pleased that the system had worked out.

"Slips for 150 items were printed giving the list price at which these items could be sold under the law. It required about three months to sell the idea to the public. The small dealer is getting more customers into the store on account of uniformity in prices. It is making a paying business of what before had been a loss. The law does not take into consideration any discounts on free goods. He could talk on the effect of this law for some time, but he closed by stating that the law is operating successfully."

The next paper on the program was "Making Your Name Worth Something," by Andrew F. Ludwig. On account of the absence of the author, the paper was deferred.

The next paper was "A New Study of Prescription Pricing," by Joseph H. Goodness. The author gave the paper in abstract and this is to be submitted for publication. The abstract of discussion will accompany the paper.

The next paper of the program was, "The Findings of a Drug Clerk Acting in the Cause of an Inquiring Reporter," by George R. Stall. The author of the paper was not present.

The next paper was on, "Opportunities in the Retail Drug Business," by Frank A. Walter. It was followed by "Price Problems with Physicians," by Emmett Weaver. The paper was read by Secretary Hein.

Chairman Lakey stated that the author of the paper speaks of the prescribing of proprietaries by physicians and that the patient purchases these afterward without a prescription. Such a statement was emphasized a number of years ago by Leonard A. Seltzer.

R. A. McDuffie had been interested in the discussion of Mr. Weaver's paper. In his opinion the drug store is no better than the human dynamo in it, and the success depends largely on his energy.

Mr. Goodness stated that there was no legal compulsion for druggists to fill prescriptions, therefore, he need not stock the preparations which had been referred to.

The following Nominating Committee was appointed: Miss Esther Garvin, C. Leonard O'Connell and C. Thurston Gilbert.

The meeting was then adjourned.

SECOND SESSION.

The Second Session of the Section on Commercial Interests of the AMERICAN PHARMACEUTICAL ASSOCIATION was convened at 10:30 A.M., August 27th; Joseph H. Goodness presided.

The first paper of the Session was, "Making Your Name Worth Something," by A. F. Ludwig. Abstract of discussion will follow the publication of the paper.

The next paper was, "Are Customers Price Conscious?" by C. Leonard O'Connell.

Joseph H. Goodness considered the paper an excellent one. In his opinion the average customer is ignorant of quality, but that he wants quality and the only way he can get it is to take the words of others. In his opinion the druggist should not make his appeal on price but on quality. In a jewelry store an imitation ring may be placed next to a very expensive one and, frequently, the customer gets his opinion of quality from the price tag. He referred also to the new inventions which are desired. The quality determines the price. The author stated that he differentiated between quality that is recognized by a person who is competent to judge and imputed quality. The latter is frequently developed by advertising. There are people who are competent to judge. He cited an example in the following of a prescription which had been filled at a much lower price than at another pharmacy. The customer was told that the higher price was charged on account of the type of store, the location, the service, and that is the price they have to charge, but they would be perfectly willing to give copy of the prescription. The explanation made was satisfactory and the patron paid the price.

Vice-Chairman R. T. Lakey took the chair.

The first subject of the Round Table was, "Pharmacy's Responsibility in the Distribution of Biological Products and Immunizing Agents." The first speaker was Clarence M. Brown. He stated that he could not give the exact figures on last year's work. Due to the increase in the number of biologicals this year it was determined to see how many stores in Columbus were handling biologicals and serums, which biologicals were handled by each store and if they carried

complete lines or broken lines. In Columbus there were only two stores handling complete lines and those were in the downtown section, both of them closing early at night. Physicians were interviewed to see how many carried their own supplies and it was found that very few physicians carry stock of biologicals and usually only a few packages. The question was asked them what happened if they needed supplies; they advised that they purchased them downtown, borrowed them from some one else or they went to a hospital for supplies. This survey awakened one store to put in proper refrigeration and this was successful to the extent that larger facilities were placed in one or more stores. In addition to having stock, physicians were sold space so that they could keep supplies in lock boxes and there was place in one store for thirty-five physicians. The stock is checked up frequently for out-of-date products. In some stores biologicals are stocked in tin boxes and kept in the soda fountain refrigerator. In his opinion there is opportunity for increased business in this line.

Henry F. Hein stated that in Texas the State Department of Health checks up biologicals in the drug stores and notes the condition in which these are kept. He inquired whether the druggists who keep stock for the physicians receive any remuneration. The reply was in the negative.

The question was asked how many of those in attendance are in States that distribute biologicals. It was stated that Pennsylvania, Michigan and Massachusetts obtained biologicals direct from the State.

Thomas H. Roach was called upon. He thought that pharmacists should have remuneration and profit from products they handle.

R. T. Lakey stated that it seemed as though responsibility was more-or-less mixed with the idea of remuneration.

The next subject for discussion was Pharmacy's responsibility in the distribution of drugs and medicines for the prevention of venereal diseases.

R. T. Lakey stated that in Michigan and many other states they have regulations. Michigan has a law that does not allow the druggists to handle this class of prescriptions unless they come directly from the Health Department. There is a State clinic to which these cases are referred. The pharmacist has very little of that business. The proposition had been taken up by the Board of Health. It was found the Board of Health was treating about 100,000 cases a year and it was also explained that the money derived therefrom was being used to extend the clinic. In order to get $100,000.00 worth of business back into the proper channels it was agreed to appoint a Joint Committee to agree upon the basis of prices on a series of 25 prescriptions, the ones most commonly used. Before that no books were kept. The prescriptions are printed on a definite form with the price of the prescription on the blank. Also, statements to the effect that if the pharmacist will not fill this prescription the patient is to apply to the office of the Retail Druggists' Association who will direct him to the pharmacy where the patient can have the prescription filled. The price is based on material cost with a very slight increase, inasmuch as this is largely charitable work.

Prof. Joseph H. Goodness thought there was certain responsibility in connection with all the questions that had been discussed.

Thomas Roach thought that moral responsibility outweighed legal responsibility.

The next subject for discussion was "The Pharmacist's Responsibility in the Distribution of Drugs, Medicine and Medical Supplies for Those on Relief."

Joseph H. Goodness said that Pharmacy is a profession and must do the right thing by humanity. Mr. Roach said that these topics were given to evoke discussion. He thought that the biological situation was one of the most difficult in the average drug store.

The next topic was "The Economic Position of Dispensing Pharmacy." Joseph H. Goodness thought that the number of prescriptions for specialties is on the increase. The pharmacists feel that a prescription calling for a specialty cannot be sold for the regular prescription price. In his opinion, it is necessary for pharmacists to become better business men.

C. Leonard O'Connell said that manufacturers had been very efficient in running their own business and they are trying to advise retailers how to run theirs. In his opinion a prescription is a prescription and the pharmacist's responsibility is just as great whether the manufacturer has produced it or not.

The Nominating Committee reported as follows: *Chairman*, Roland T. Lakey, Michigan; *Vice-Chairman*, Henry F. Hein, Texas; *Secretary*, Joseph H. Goodness, Massachusetts; *Delegate to the House of Delegates*, R. W. Rodman, New York.

There being no further nominations from the floor, the nominees were elected.

The officers elected thanked the members for the honor conferred and stated, "they would do everything they could in promoting an interesting program for next year."

Following this, the Section was adjourned.

All papers of the Sections are referred, according to usual custom for review before publication. See Notice to Contributors, published periodically. A copy will be found in the October JOURNAL, *page 962.*

SECTION ON HISTORICAL PHARMACY.

The Memorial Hour was made part of the First General Session. The program was presided over by Chairman Heber W. Youngken—October JOURNAL, pages 884–891, which see.

The First Session of the Section on Historical Pharmacy was convened by Chairman Heber W. Youngken at 2:00 P.M., August 26th. The first order of business was the reading of the Chairman's Address.

ADDRESS OF THE CHAIRMAN.

BY HEBER W. YOUNGKEN.

In accordance with past custom, it devolves upon your chairman at the opening of the First Session of the section on Historical Pharmacy to make some remarks bearing upon matters of the section. But before doing so I welcome you to this meeting and to participation in its proceedings. I express my appreciation to the many contributors of papers for this year's program, to Secretary Harris for his splendid coöperation in soliciting papers for the meeting and to Historian Eberle for his helpful suggestions during the year.

Carlyle has said: "History, as it lies at the root of all science, is also the first distinct product of man's spiritual nature."

We see in this utterance words of deep significance for the practicing pharmacist, teacher, journalist, laboratory technician and research worker; in fact, for all who labor in the science and art of the apothecary. The development of pharmacy in all of its phases to-day takes us back through many eras of trial and error, struggle and perseverance of man during which there slowly evolved the sciences upon which the very foundation of pharmacy rests. In the stress of modern civilization and competition, man is often wont, in his instinct of self-preservation and his rush to accumulate the comforts of life, to neglect the finer values of his calling.

For most of these the pharmacist must go to the fountain of the history of pharmacy. Here we receive inspiration and knowledge which brightens our vision for the daily problems in whatever branch of pharmacy we are following.

Pharmaceutical History has endowed us with a rich legacy of literature. It should be the continual function of the members of this section to unlock the hidden treasures of the past and write new historical literature. We have been gradually evolving from our contributors a good beginning for an American pharmaceutical history. No better foundation for this work could be established than that already started in this section by several of its members in bringing to light and into script the drugs and practices of our first landlords, the Indians of North America. More researches and papers are invited on this fascinating subject. Equally commendable is the literature we are accumulating on the history of pharmacy in our states. Largely through the coöperation of some of our State pharmaceutical associations and members, several contributions on this phase of history have been recorded. I hope that our members will be instrumental in collecting more historical data on the past history of pharmacy in their own states. The unwritten history of old-established American drug stores, colleges of pharmacy, and of manufacturing, pharmaceutical, crude drug and chemical houses are some additional themes worthy of consideration for the future.

On motion, duly seconded and carried the address was received.

Chairman Youngken called on Secretary Loyd E. Harris, who made a verbal report:

"About 250 letters were mailed out to contributors, or former contributors of the section; the responses are indicated by the printed program. An effort was made to secure papers from Texas; he hoped to have a rather definite corner of this program dedicated to Texas. Some papers are on the program."

Chairman Youngken thanked the Secretary for his coöperation and work in the preparation of the program.

Chairman Youngken appointed the following members of the Nominating Committee: J. T. Lloyd, *Chairman;* William H. Glover, John N. McDonnell.

A paper on "Jons Jacob Berzelius," by Louis Roddis was submitted. In presenting the paper—"Is There Anything New under the Sun," by Theodore J. Bradley, the author stated that it was a very brief survey of a very large subject or group of subjects, and could be expanded into a much larger one.

L. F. Kebler looked upon Berzelius as having had some of the greatest ideas. He was one of the first men who brought forth the idea that disease was in the human body due to the absence of certain chemicals and that when those substances were supplied, health would be restored. We know how nearly true that is to-day. Of course, Berzelius is one of the men who came in shortly after the alchemistic period. He did not quite overthrow the Philosopher's Stone, but he gave it a pretty hard nudge. He was really the first medical chemist we had of any moment. He was rated, to my surprise, as the first chemical engineer. He certainly did develop a great many ideas in overthrowing the old alchemy thought and going into the biological chemistry. E. G. Eberle referred to Sir Joseph Wilson Swan, British pharmacist, as a co-discoverer with Edison.

The Historian's report was presented.

THE HISTORIAN'S REPORT.

BY E. G. EBERLE.

The thirty-fourth annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION was held at Providence, R. I., in 1886. Fifty years after, we are meeting in Texas; Rhode Island was settled by Roger Williams in 1636; settlement of Texas was attempted by LaSalle in 1685. Rhode Island was one of the original thirteen states; Texas was organized as a Republic in 1836 and Sam Houston was a hero of that eventful period. The Centennial celebration records its history.

Fifty years ago, at the Pittsburgh meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION, Dr. Charles Rice, as Chairman of a committee, presented a proposition for a "National Formulary of Unofficial Preparations" under the auspices of the AMERICAN PHARMACEUTICAL ASSOCIATION. E. A. Calder, of Providence, was a member of the Committee having the preparation of this issue in charge and Texas was represented by E. M. Wells of Fort Worth, Texas, with whom this writer had the privilege of working. National Formulary VI and U. S. Pharmacopœia XI became official standards from June 1, 1936, and are part of the history of pharmacy.

The foregoing statements will serve as the introductory of the Historian's Report.

The 83rd annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION was held in Portland, Oregon; its transactions have become part of our history. During the year past important events have transpired, many of which have affected pharmacy. Some of the legislation enacted by Congress was modified or changed to meet decisions of courts, but form the basis of laws which have been passed and are still under consideration. Reference is made for record, without any attempt at discussion, however papers and addresses of the Portland meeting have given consideration to the subjects as they apply to drug-trade activities and professional relations. Codes were written and unwritten—that is the process of history—and many ideas were developed that will improve conditions and bring about better relations.

A number of the articles presented to the sections have made history, but more than reference would extend the Historian's report unnecessarily. A study of the subjects and transactions is necessary and pharmacists will value them.

Each revision of the official standards becomes part of the history of pharmacy. Many articles by the Chairmen of the U. S. Pharmacopœia and of the National Formulary have been published, and others have added valuable contributions. The revision of the A. PH. A. Recipe Book is well under way and will soon be completed.

References are made in this report to some of the events contributing to pharmaceutical history, but as many must be left to the readers of pharmaceutical publications, those included are

largely suggestive of other events. Each year an attempt is made to list events of the year, as in the January JOURNAL, on page 1.

THE 1936 MEETING.

This year we meet in Texas. The missions of an early period served the inhabitants of the surrounding country, providing also the medicines. Second only to the Alamo as a sacred shrine of Texas martyrdom is the old mission of La Bahia del Espiritu Santo, popularly known as the Mission of Goliad, near the city of Goliad. During Spanish colonial days a presidio or garrison of soldiers was maintained here; originally located on Matagorda Bay, the mission and presidio were transferred inland to the present site on the San Antonio River.

San José Mission at San Antonio generally is recognized as the finest example of Franciscan mission architecture to be found in the present limits of the United States. Its famous rose window has been the subject of song and legend for many generations. Extensive restoration of the entire mission compound as it was originally laid out by the missionary fathers has been made possible in recent years through Public Works Administration grants.

INTERNATIONAL CONVENTIONS.

The Twelfth International Congress of Pharmacy was held in Brussels during the week of July 29, 1935. M. Pattou, president of the National Pharmaceutical Society and also of the Congress, presided. The King and Queen of Belgium attended the opening session; also French and Brazilian Ambassadors and dignitaries from a number of countries. The President spoke of Pharmacy as a profession possessing equal rank with other learned societies of the world. The League of Nations is to be asked to establish a commission for the production of an International Pharmacopœia.

Dr. Erskine Hume, librarian of the Army Medical Library, Washington, rendered a comprehensive account of the Congress of Pharmacy. Due to the serious illness of Professor Charles H. LaWall, who was to represent the AMERICAN PHARMACEUTICAL ASSOCIATION, Dr. Hume unofficially represented the ASSOCIATION and presented the report published in the December JOURNAL, pages 1113 to 1119.

The Bureau of the International Pharmaceutical Federation met in Cambridge, England, during the last week of May; nine countries were represented by delegates.

The meeting of the Society for the History of Pharmacy was held in Stuttgart, Germany, June 16th to 18th; this is the 10th anniversary of the organization. Dr. Häfliger, the president of the organization, presided. In his address he referred to the activities of the Association during the ten years and the results which followed. He complimented the work of Dr. Fritz Ferchl.

Dr. O. Zeckart referred to the work of Carl Wilhelm Scheele. Dr. George Edmund Dann delivered an address in which he gave a comprehensive genealogy of the apothecary and chemist, Martin Heinrich Klaproth. It is interesting to note that two members of the family, namely, the one referred to, and Julius Klaproth, were outstanding in their respective fields—the former as chemist and the latter as orientalist.

AMERICAN PHARMACY AND VISITORS.

Pan-American Health experts met in Washington in April 1936, and during their stay visited the AMERICAN INSTITUTE OF PHARMACY. Among the important transactions were discussions on the Spanish translation of the U. S. Pharmacopœia. Among those taking active part were Dr. B. J. Lloyd of the U. S. Public Health Service and Pan-American Sanitary Bureau; Dr. L. L. Williams, Jr., U. S. Public Health Service; members of the Board of Trustees and Committee of Revision of the U. S. Pharmacopœia.

Among the representatives of Latin American countries were: Dr. Justo F. Gonzales, Uruguay; Dr. Enrique Torres Herrera, Colombia; Dr. Emigdio Lola, Nicaragua; Dr. Solon Numez, Costa Rica; Dr. A. A. Moll, Pan-American Sanitary Bureau; Dr. Enrique Lopez-Herrera, Guatamala; Dr. Gregorius Marquez, Pan-American Sanitary Bureau; Dr. W. E. Coutts, Chile; Dr. Arnoldo Gabaldon, Venezuela.

Dr. Thomas Parran, the new Surgeon General of the Public Health Service, and Dr. Hugh S. Cumming, the retiring officer, participated in the week's sessions; also Director George W. McCoy, of the National Institute of Health, and Assistant Surgeon General J. P. Leake. Other

speakers, listed among the visitors, were: Dr. Miguel Sussini, Argentina; Dr. Barros Bareto, Brazil; Dr. Ramos, Cuba; General Siurob and Dr. Bustamante, Mexico; Dr. Monge, Peru; Dr. Lola, Nicaragua, and Dr. Gonzales, Uruguay.

Thirty or more German apothekers visited in the United States in April 1936. They hailed from twenty German cities and included the following: Werner Mueller, Hans Strobel, Aloes Wimmer, F. Kinast, John Hermes, George Scheuing, Willy Bruennor, Mrs. Anna Schulte, Mr. and Mrs. Ruhnke, George Kernes, Paul Preuss, Mrs. Martha Preuss, Mr. and Mrs. Kuby, Ernest Erfurt, Gustav Buchheim, Wilhelm Mardner, Gustav Riedel, Herman Stadtmueller, Richard Reichel, Mr. and Mrs. Louis Mattheides, Rudolph Wittke, Friedrich Brunner, Mrs. Emma Vollbrecht, Arthur Bertram, Paul Skrzipietz, Hans Wagenknecht, Otto Bayer, Julius Mayer, Ernest Hennecke, Richard Klahr, Gero Lindau, H. Motte.

NOTES.

The biography of James Cutbush, an early Apothecary-General, food chemist and apothecary, was depicted in the June JOURNAL (1936), page 485.

The original "Badianus Manuscript" is in the Vatican Library, the herbal was composed in 1552 in the famous College of Santa Cruz at Tlatelolco, Mexico City. An historical account by Dr. Emily Walcott Emmart, of Johns Hopkins, is published in the September JOURNAL (1935), page 771.

"Apothecary Shops of Colonial Times," by Millicent R. LaWall, was presented before the Section on Historical Interests. The oldest record of an apothecary shop in America is referred to as of William Davies in Boston, 1646. The oldest American apothecary shop still in existence is in Rau's Pharmacy, Bethlehem, Pa.

An historical article on "Ancient Medicinal Uses of Gems and Precious Stones" was the subject of A. Richard Bliss, Jr., before the Section on Historical Interests at the Portland meeting, published in the June JOURNAL. Martha E. Foulk and Elizabeth Pickering presented a History of Dentifrices at the Portland meeting before the Section on Commercial Interests.

A list of the Ebert Prize Awards, from 1874–1935, is given in the March JOURNAL for 1936. The Ebert Prize was awarded to Marvin J. Andrews in 1935, at the Portland meeting.

H. C. Christensen and the Committee on Pharmacy Exhibit at the Chicago Century of Progress, emphasized to the people the public health service of pharmacy.

Samuel L. Hilton was awarded the Remington Honor Medal at a dinner in Washington, October 19, 1935.

The Remington Memorial Laboratories were dedicated at the Philadelphia College of Pharmacy on January 31, 1936. The donors are Josiah K. Lilly and Eli Lilly, alumni of the College.

The Pharmacy Week Prize for 1935 was awarded to Nathan Fried of Chicago. The Committee stated that the window is a complete and interesting story; educational, and conveys to the public mind the professional knowledge and skill required of the pharmacist. Ten certificates of Merit were awarded—see report in April JOURNAL, page 351.

Anton Hogstad, Jr., is the chairman of the Pharmacy Week Executive Committee. He has prepared for distribution a series of messages bringing the story of pharmacy, in various phases, to the public.

RETIREMENTS.

Dr. Edward Kremers retired as head of the Course in Pharmacy, June 30th. He became a member of the faculty in 1890 and head of the Department in 1892. He is the father of this Section on Historical Pharmacy.

Leopold van Itallie, professor of Pharmacy and Toxicology at the University of Leiden for 29 years, gave his farewell lecture on July 1, 1936. The subject of the address was, "The Growth of Toxicology." Dr. van Itallie was elected honorary member of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1923.

Dr. Reid Hunt, professor of pharmacology at Harvard Medical School, has retired. He is a member of the ASSOCIATION, and was president of the U. S. Pharmacopœial Convention 1920–1930.

Prof. Clyde M. Snow, of the University of Illinois College of Pharmacy, retired in June 1936, after thirty-six years of active service.

Dean Frederick J. Wulling announced his retirement after a period of service of 44 years at the University of Minnesota, School of Pharmacy. He was president of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1917.

Dean Willis G. Gregory of the University of Buffalo School of Pharmacy since 1890 has retired as dean. He joined the School of Pharmacy in 1886.

William B. Day, after a service of thirty years as secretary of Illinois Pharmaceutical Association, has retired.

Brooklyn College of Pharmacy, Long Island University, celebrated its 50th anniversary, April 21, 1936. Dean W. C. Anderson was a member of the first graduating class and received Diploma No. 1.

Tennessee Pharmaceutical Association celebrated its Golden Anniversary in July 1935.

North Dakota Pharmaceutical Association was incorporated under territorial laws, December 15, 1886. W. P. Porterfield prepared a paper for the veterans' association tracing the history of the association up to the present.

South Dakota Pharmaceutical Association celebrated its Golden Anniversary at Sioux Falls, May 5th–7th.

Dutch pharmacists are celebrating this year the 300th anniversary of the Amsterdam Pharmacopœia. Prior to that date many formularies were in use, notably the Dispensatorium of Valerius Cordus.

George W. Sloan, former president of the AMERICAN PHARMACEUTICAL ASSOCIATION (1880), read a paper before Indiana Pharmaceutical Association in 1885, giving an analysis of 1000 prescriptions, quinine was a component in 238 prescriptions.

The late F. W. Meissner had his 50th display at the LaPorte County Fair in 1935.

RECENT DONATIONS TO THE LIBRARY AND MUSEUM OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Several members, among them Samuel L. Hilton, present pharmaceutical publications from time to time. John A. Gerlach of Baltimore, donated an old prescription scale, in case. Mrs. Albert Gray Drane, through Dr. Charles B. Campbell, donated several mortars used by Dr. Marcellus McKenzie, Charlottesville, Virginia, 1846. George H. Kernodle, of Georgetown, presented a mortar, carved out of the mast of a ship.

The School of Pharmacy, University of Minnesota, presented a valuable exhibit consisting of photographs of the plant gardens and milling equipment of the School and of the medicinal plants grown and prepared therein. The photographs are handsomely mounted in a display stand and have interested many visitors, as illustrating an important pharmaceutical activity not generally known to the public. This type of educational exhibit is very helpful—and it is hoped that each school and college will present an exhibit illustrating some outstanding activity of the institution.

Mr. and Mrs. J. C. Peacock, presented through former President Fischelis—a complete projection apparatus for the meeting room.

The National Association of Boards of Pharmacy contributed a set of its proceedings; O. U. Sisson, an enlarged photograph of "The Laboratory."

Miss Esther Barney presented a framed and colored picture of the Pharmacy Exhibit at the Century of Progress; Mrs. True and Mrs. Holton, a counter scale and other equipment from the original Sharp & Dohme retail pharmacy, as well as a number of photographs; Mrs. Harvey A. Wiley, a number of books and pamphlets from the library of her late husband. Mrs. L. S. Williams, Baltimore, presented a copy of Boerhaave's Materia Medica. The late L. S. Williams donated a large number of show globes, several mortars, scales and balances.

Books and bound volumes of pharmaceutical publications from the Library of the late Joseph P. Remington were presented by Professors Charles H. LaWall and E. Fullerton Cook; Mrs. L. L. Walton has donated quite a number of pharmaceutical publications and N. A. B. P. Proceedings; Mrs. F. W. Meissner has contributed publications and an autobiography of the late Leo Eliel; C. Herbert Packard, for Joseph Price, has donated an illustrated volume on Henry Troth; Bernard E. Read, of Union Medical College, China, has contributed a number of books on Chinese Materia Medica.

Other donations have been reported in Council Letters.

Mathias Noll, veteran Kansas Pharmacist, of Topeka, has completed a History of Pharmacy in Kansas and presented a typed manuscript copy to the AMERICAN PHARMACEUTICAL ASSOCIATION. The history covers every phase of the drug business and of pharmacy, the various organizations, lists of memberships and biographical sketches, prints and photographs of individuals and groups. Mr. Noll has rendered an outstanding and distinct service and set an example for pharmacists in other states and sections of the country to make related efforts, not only to bring the history of pharmacy to pharmacists but acquaint the public with the history and activities of the profession. The AMERICAN PHARMACEUTICAL ASSOCIATION is indebted to the historian by this presentation.

Dean Eugene O. Leonard, of the Pharmacy Department, University of Idaho, has prepared a history of Idaho, dealing with pharmacy from the earlier periods to the present. The paper was published in a bulletin of Idaho Pharmaceutical Association.

Early Pharmacy of Oklahoma was the subject of Loyd E. Harris; Lew Wallace wrote on Pharmacy in Mississippi, and an article on the Early Days of Pharmacy in the West, by John T. Moore, was presented at the Madison meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION, by L. D. Havenhill; published in the August, 1936, JOURNAL.

Dean Frederick J. Wulling has presented an article describing the pharmaceutical exhibit of the College of Pharmacy, University of Minnesota.

Contributions on the medical practices and materia medica of the American Indians were subjects of the Section on Historical Interests. W. T. Bradley discussed those of the New England Indians and John Culley's paper dealt with California Indians.

C. O. Lee discussed herbals in his paper on "Pharmacy through the Ages." He also made a valuable contribution as Chairman of the Section on Historical Pharmacy by compiling the titles of unpublished articles contributed to the Section.

CENTENNIAL OF WEIGHTS AND MEASURES.

Decades of confusion and turmoil preceded the Federal system of standards before the adoption of a resolution by Congress in 1836, which provided:

"That the Secretary of the Treasury be, and he hereby is, directed to cause a complete set of all weights and measures adopted as standard and now either made or in progress of manufacture for the use of the several custom houses, and for other purposes, to be delivered to the governor of each State in the Union, or such persons as he may appoint, for the use of the States, respectively, to the end that a uniform standard of weights and measures may be established throughout the United States."

LEGISLATION.

S. 4390 has become law, whereby commissions are provided for pharmacists in the Medical Administrative Corps of the Army. The pharmacists must be graduates of recognized schools or colleges of pharmacy, requiring four years of instruction for graduation, under such regulations as the Secretary of War shall prescribe. Its adoption makes possible the commissioning of pharmacists in the Reserve Corps and in the National Guard, as soon as arrangements can be worked out, which means that a properly organized pharmaceutical service can be established in time of War or of other necessity.

The Federal Food and Drugs Bill failed to pass at the last session of Congress. The House insisted on its provisions giving the Federal Trade Commission jurisdiction over advertising of foods, drugs and cosmetics; Senator Copeland would not deprive the Food and Drug Administration of essential control over matters pertaining to public health.

DEATHS.

Dr. Henri Golaz, professor of Galenical Pharmacy at Lausanne University and Chief Pharmacist, died June 30th, aged 75 years. He was Chairman of the Committee for the Unification and Standardization of Preparation of Poisonous Drugs and member of the Revision Committee of the Swiss Pharmacopœia.

Dr. Herman Emde, director of the Pharmaceutic Chemical Institute of Albertus University, died in 1935.

Professor Lydia Rabinowitech-Kempner, associate of Robert Koch in his famous important investigations, died August 3rd (1935), in Berlin.

IN MEMORIAM.

The following have served pharmacy and record is made of work well done. Among them are: H. D. Barnett, James H. Breasted, Henry C. Biddle, Swan Brookshire, Albert H. Brundage, Marshall Close, John Coughlin, Wm. L. Crounse, C. Louis Dohme, Wm. A. Dyche, Hermann Emde, Frederick H. Fricke, Edward George Geiger, Albert Goris, Dudley H. Grant, Antoine E. Greene, Raymond Hendrickson, Andrew M. Heyl, L. E. Highley, Joseph Frey, Philemon E. Hommell, Gertrude S. Kellicott, Robert Henry Land, Elie Henry LaPierre, Alfred Lapouraille, A. M. Lichtenstein, John Uri Lloyd, Lewis W. McConnell, F. W. Meissner, Jr., Wm. F. Michel, John B. Michels, Dr. Charles Jean Henry Nicolle, Ivan P. Pavlov, W. Bruce Philip, Thomas H. Potts, George L. Rapport, George David Rosengarten, Henry C. Senecal, Edward V. Sheeley, L. G. Smith, Wm. Lincoln Stearns, Mrs. Josie A. Wanous Stuart, Walter J. Sturgeon, A. L. Tafel, J. Allen Tailby, C. P. Van Schaack, William Votteler, L. L. Walton, C. L. Wareham, Henry S. Wellcome, J. Fred Windolph, Henry E. Wrensch.

Tribute will be paid to a number of the departed, during a Memorial Hour provided by the Section on Historical Interests; therefore special comments will be omitted from this report.

The report was accepted.

Chairman Youngken referred to a paper on "Doctor Charles Rice," by John Uri Lloyd, to be read by J. T. Lloyd. This paper was communicated as to its contents by Dr. John Uri Lloyd to his son with the understanding that it was not to be published until after his death, and we are very highly honored to have with us to-day a son of the *Great Lloyd*, whom I shall call upon at this time.

The speaker said: "Probably every one here knows who Dr. Rice was and what he did, but it seems probable that many do not know that there was considerable mystery concerning the origin and early days of Dr. Rice. He seems to have been a man who had many friends, with few of whom he was intimate. Among these few, I believe, my father was more intimate than anyone else. Accordingly, approximately seventeen years ago I asked my father if he would tell me the story of Dr. Rice as he knew him. One of those days when my father was quite talkative and expanded a good deal, I asked the stenographer to take down what he said. It was taken down just in the words in which he told it to me, not for printing or publication. I let him read it after it was typed and he handed it back to me and said that in case it was published, to hold it until after he was gone. This I have done. Now I am going to ask the Chairman to read the paper which father dictated."

Chairman Youngken read the paper.

E. G. Eberle said: "We have down at the INSTITUTE OF PHARMACY three volumes of the Pharmacopœia Revision Committee of 1890. He did all of his writing by hand. Each volume is about twelve inches thick and throughout are many pages by Charles Rice in his own handwriting. He was an outstanding Sanskrit scholar."

E. J. Ireland inquired whether Dr. Rice attended the University of Heidelberg? Was the name of the boat on which Dr. Rice came to this country known?

Dr. Lloyd did not know whether Dr. Rice attended Heidelberg. He said: "My father was not sure what flag the boat flew. He was of the opinion that it was British. I will add that in the Lloyd Library there are many, possibly hundreds, of letters in the handwriting of Dr. Rice. Many of them have to do with the revision of the Pharmacopœia. Some of them are personal also, all having to do with pharmacy and possibly there should be a record made that those letters are there."

S. L. Hilton said: "It was my pleasure to know Dr. Rice personally. He was, without a doubt, the greatest Sanskrit scholar in this country. The records that Mr. Eberle spoke of in the Pharmacopœia are wonderful—clear and distinct. I have in my possession a record of the expenditures for the revision of the Pharmacopœia when he was chairman. He was a delightful man to know."

Lyman F. Kebler said: "I knew Dr. Rice and visited him a number of times in Bellevue Hospital. He gave me a great deal of information and inspiration. The Pharmacopœia of 1890

was the first to contain any methods of analysis for the determination of alkaloids and Dr. Rice was undoubtedly responsible for those methods. It may be very singular, but true, that previous to the 1880 Pharmacopœia there were so-called standards. The Pharmacopœia of 1860 gave the amount of alkaloids in opium and cinchona bark, but no methods. Notwithstanding the fact that the government laboratory somewhere had those methods, they were not included in the Pharmacopœia."

The paper was ordered to be published.

The next paper was entitled, "Francisco Redi, a Pioneer in Plant Ash Studies," by Lyman F. Kebler. E. J. Ireland inquired if this was the same man who did some work on the germ theory.

The author was not certain; Chairman Youngken stated that a man of that name had much to do with the development of the germ theory.

The next paper was, "Giles Firman, Senior," by W. T. Bradley.

The next paper: "Pure Food and Drug Legislation Started in United States One Hundred Years Ago," by Lyman F. Kebler. Read by the author. The author stated: "I might make a statement to show the difficulties encountered in these investigations. I had to have a reference to a food and drug law that was passed say in about 1860 or 1870 and I knew it was in the Congressional Library. I sent in my card to get that book. Probably, I tried it a dozen times over a course of two years and could not get it. It was never on the shelf. I finally went to one of the young men and said, 'Now that book is not on the shelf. That has been the report for about two years now.' Then he took me up to the party who has charge of that line of work in the law library of the Congressional Library and when I told him what I wanted he dug it up for me. The book was in the library all the time. After I got track of that book, then I found all the others."

The paper was received for publication.

Secretary Loyd E. Harris introduced Walter Cousins, who read a paper on "Chuck Wagon Therapy." (It is published in the October JOURNAL, page 877; the name of the horse was "El Diablo"—"no more," simply designated that he was dead.) Mr. Cousins is editor and publisher of the *Southern Pharmaceutical Journal* and also president of the Texas Cowboy Reunion Association. The author enlarged on his subject and spoke relative to other treatments in his own style of presentation. E. J. Ireland thought students should seek out similar information for, in not many years, it will not be obtainable. E. G. Eberle stated that Dallas was settled by French, Julien Reverchon belonged to the colony. Secretary Loyd Harris has a student working on historical material of the Southwest.

The next paper was on "History of Pharmacy in New Braunfels (Texas)." In complimenting the paper, E. G. Eberle added some information on New Braunfels (Mr. Hein is a descendant of a settler of this section). The paper was further discussed by Theodore J. Bradley and others, bringing out the character of these German people.

The Session was adjourned.

SECOND SESSION.

The Second Session of the Section on Historical Pharmacy was called to order by Chairman Heber W. Youngken at 9:00 A.M., August 27th.

The first paper read was: "Some Herb Remedies of the Aztecs," by Dr. Emily Walcott—read by Secretary Loyd Harris. He and Chairman Youngken complimented the paper.

J. T. Lloyd said: "Some of the things in the paper had special interest to me. I read a paper before this ASSOCIATION, on Peyote. I am going to refer to an experience with it. I came up from the West coast of Mexico and landed at a little Indian town of Los Piñas, which you will scarcely find on your map. I got an Indian guide—I remember him yet, tall, athletic—Juan Estrello (John Star). It was hard for me to tell why he was in such a great hurry to reach a certain place. I was simply worn out when I got there late at night over practically trailless mountains. When we arrived, the Indians were starting some festivity. They had a great, enormous pile of logs which was burning brilliantly and the Indians dancing around the logs, I was tired. After watching them a while I fell sleep. I did not know what the ceremony was about."

(The speaker vividly described the hallucinations and the brilliant light and colors induced by the use of peyote.)

"Within the past year a book came out entitled, 'The Diabolical Root,' I don't remember the author, though I corresponded with him. It is on Peyote. The author lived with the Indians for a considerable period of time and he describes the legends connected with the use of that root. It is undoubtedly a most complete account of it and its uses.

"There is another thing which was brought to my mind by hearing this paper and also I have possibly mentioned this before. The primitive people—all almost, if not quite—invariably ascribe divine power to narcotics and stimulants. Take such a mild stimulant as caffeine. Every caffeine-bearing plant was discovered by primitive people, unless possibly it was tea, of which I do not know the origin, and every one of them was used with ceremonies to the Divinity. I cannot comprehend how primitive people with no facility for making tests of heart, respiration, etc., could determine that a plant contained caffeine. Of course, they knew nothing of caffeine, but they did use these plants for the stimulating effect.

"If these people were able to determine an effect as mild as that, is it not reasonable to suppose that they were also able to discover other medicinal effects, even though they are not pronounced? It is beyond my comprehension to think that people with no laboratory facilities could find these caffeine-bearing plants—mate and others—yet it was done."

W. T. Bradley was interested that these Aztecs used mostly complex medicines, whereas the more primitive Indians in Northeastern America used mostly simples.

The next paper was: "What Difference Does a Century Make?" by John E. Kramer, presented by John N. McDonnell.

Chairman Youngken: You have heard the presentation of Mr. Kramer's paper. It is quite obvious that history repeats itself. The paper is now open for discussion. If there is none, we will pass on to the paper by our recent past chairman of this section, whom we are honored to have with us to-day, Professor C. O. Lee, who will present a paper entitled, "Discovering Pharmacy through History." (It is published in the October JOURNAL, page 872.)

C. O. Lee in discussing his paper said that it was not an historical paper but an appeal for the study of history in the Schools of Pharmacy.

Chairman Youngken thought there was no time better suited than during the first year for the presentation of the course in Pharmacy and he thought a student who listens to a course of this kind during the first year will be encouraged in pursuing it for the remainder of the course. When he was a student in the Medical Department of the University, the Dean gave a course in the History of Medicine, which was inspiring.

C. O. Lee said that the method in the courses of the History of Medicine are inspiring.

British writers seem to give more attention to the History of Pharmacy.

Robert W. Rodman said that the newspaper people were after papers of the Section on Historical Pharmacy.

Secretary Harris was called out of the room for papers and Professor Lee and Dr. Kebler loaned copies of their papers so that they might be abstracted. The newspaper men in the hotel were waiting to see the paper by Miss Emily Wolcott on "The Aztecs." He was of the opinion that the papers of the Historical Section should be written in triplicate so that they might be given publicity promptly.

Chairman Youngken said he appreciated the interest and activity in relation to the historical papers and he hoped that the incoming chairmen of the Section would remember that papers to the Section on Historical Pharmacy should be written in triplicate.

C. O. Lee inquired what had happened with the information collected on the History of Pharmacy a few years ago.

Chairman Youngken replied that this had not been published, but if he were correctly informed, there was some material on hand, none of it completed.

Lyman F. Kebler remembered, that he was supposed to contribute a paper on Food and Drug Legislation but such work requires time and stated that he still was working on the history.

W. T. Bradley said that there was no point in hurrying. The writing up of historical material is slow, if it is to be of real service.

A. G. DuMez stated that when the effort is renewed to prepare the historical material the proper help should be given for assembling the material. As it is now, it is simply a matter of memory.

E. J. Ireland said that whoever compiles the historical material should get in touch with Dr. Edward Kremers who has a vast store of such information.

L. F. Kebler said he did not contribute to the compilation, because what he had was not complete and would require years, perhaps, to do so; it is slow work to make search, in order to get authentic information. The data must be collected and after being assembled, condensed.

Chairman Youngken thought that steps should be taken for the compilation of historical matter.

A. G. DuMez moved that the Section on Historical Pharmacy petition the A. PH. A. to provide means for assembling historical data, now in the hands of the Historian and others. The motion was duly seconded and carried.

C. A. Dye suggested that the motion be amended, to urge the ASSOCIATION to prepare for this work and Ernest Little suggested that this information be obtained from others besides the Historian.

A. G. DuMez stated that this was his intention, namely, that the information should be gathered from all available sources.

L. F. Kebler referred to prescriptions that were picked up under the Food and Drug Act, several years ago. It would have been very troublesome indeed if the physician had to include on the label quite a number of things that he prescribes.

Robert W. Rodman presented his paper, "The Perfect Historian." (To be published.)

Loyd E. Harris referred to his paper, published in the May JOURNAL, page 436. He distributed reprints of the article.

The next paper of the program was on, "Jöns Jacob Berzelius," by L. H. Roddis. It is published in the October number, page 874.

W. T. Bradley inquired what had become of the paper on, "Pioneers of Pharmaceutical Education in the U. S." Secretary Harris stated that this had not been sent in.

Secretary Harris read a paper by Miss Margaret Cousins on, "J. Meyenberg, Drugs."

C. A. Dye inquired whether it was true that German was spoken in that section of Texas until recent years.

Chairman Youngken advised that this was his understanding.

E. J. Ireland suggested that a good way to bring more members into the meetings of the Section on Historical Pharmacy would be to have an historical display.

C. A. Dye thought the Section on Historical Pharmacy should have a good meeting room, which is easily accessible.

J. T. Lloyd referred to the early history of this Section. Dr. Edward Kremers is responsible for it. At first the idea met with opposition. Many said that it could not be developed; that a sufficient number were not interested in history. He referred to a meeting which was unusually successful and detracted from other sections. At that meeting a number of illustrated papers were on the program. He thought moving pictures might be shown that related to pharmacy.

Chairman Youngken said that one reason for small attendance at the Section is the fact that there are so many programs going on at the same time.

George C. Schicks thought it would be possible, next year, in New York, to introduce a movie feature.

J. T. Lloyd said, while he had no film on historical pharmacy, it would be possible to find some historical places to be filmed.

W. T. Bradley referred to a film shown several years ago, depicting the alchemist.

George C. Schicks stated that at the Pharmacy School moving pictures are used in creating interest in student functions.

Chairman Youngken said that he would like to have some films for next year's meeting.

J. T. Lloyd referred to pictures which he had taken in Samoa, in 1903, characteristic of native life.

Chairman Youngken stated that these suggestions were interesting and he hoped would bring results to the New York meeting.

The following papers were read by title:

"Pioneers of Pharmaceutical Education in the United States," by Ernest T. Stuhr.

"A History of the Oklahoma State Board of Pharmacy," by Wm. G. Bray.

"The Literary Pharmacopœia of Scott," by Edward Kremers.

"Verbena in Early Roman Rites," by C. J. Zufall.

"An Interesting Old Medicine Chest," by Charles Whitebread.

The report of the Nominating Committee was called for. It was presented by Chairman J. T. Lloyd. This follows:

Chairman, Loyd E. Harris, Oklahoma; *Secretary*, Edward J. Ireland, Florida; *Delegate to the House of Delegates*, Heber W. Youngken, Massachusetts; *Historian*, E. G. Eberle, Washington, D. C.

The motion was duly seconded and carried that the nominees be elected officers for the ensuing year.

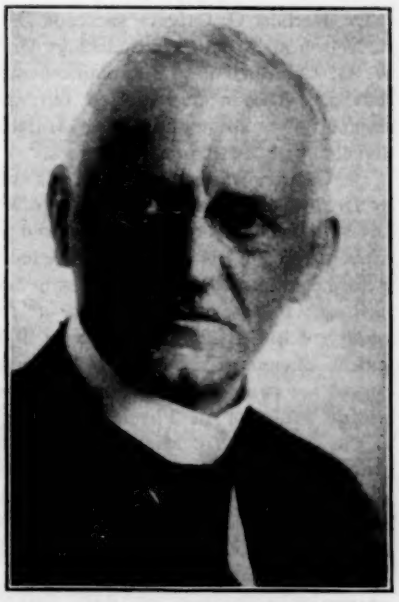
The retiring officers thanked the members and the newly installed officers expressed appreciation of the honor conferred.

The Section was then adjourned.

All papers of the Sections are referred, according to usual custom for review before publication. See Notice to Contributors, published periodically. A copy will be found in the October JOURNAL, *page 962.*

SEVENTIETH BIRTHDAY ANNIVERSARY OF HEINRICH ZÖRNIG.*[1]

Heinrich Zörnig, Ph.D.—Apothecary, Professor in ordinary of Pharmacy, Director of the Pharmaceutical Institute of the University of Basel and honorary member of the AMERICAN PHARMACEUTICAL ASSOCIATION—was born December 27, 1866, in Barmen, Rhine Province. After attending the Royal Gymnasium of his home city, he passed his apprenticeship in the Adler Pharmacy in Erlangen. The prescribed three years as assistant took him back to Barmen, then to Elberfeld, Nohfelden, Zofingen and Basel. Some of the activities prior to coming to Heidelberg are omitted for reasons indicated in a foot-note.



HEINRICH ZÖRNIG.

At Heidelberg (1901) he pursued studies in Botany, Chemistry, Chemistry of Foods and Zoölogy. He was made Doctor of Natural Philosophy in July 1903. He was voluntary assistant to Dr. Pfitzer at the Botanical Institute until he accepted the post of Assistant Professor of Botany and Pharmacognosy in the Institute of Plant Physiology at the University of Munich. At this time he was also member of the Examining Board for State Pharmaceutical Examination, curator of the Institute. In 1904, he was granted leave for one semester for work at the Botanical Institute of Bonn. In 1916, he was called to the University of Basel as Extraordinary Professor of Pharmacy and was made Professor in ordinary at the same institution in 1917.

In Munich, Zörnig founded the Pharmacognostic Collection at the Institute of Plant Physiology, one of the most complete in Germany; he also established the new Botanical Museum at the same Institute; he was one of the founders of the Pharmaceutical Society of Munich. The new Pharmaceutical Department in Basel, with its rich collections, was established under his direction.

At various periods, Dr. Zörnig traveled extensively, pursuing studies. His scientific

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* Prepared from data received from Prof. J. A. Häfliger, Basel.

[1] A sketch was prepared by the late Hugo Kantrowitz and published with frontispiece in the February JOURNAL, 1921, therefore these data have been condensed.

activity lies principally in the field of pharmacognosy; in the history of the development, and in comparative anatomical studies, of medicinal plants and drugs derived from them, and in the history and geography of the culture of medicinal plants, etc.

In pharmaceutical circles his name has become known through a work in two volumes "Arzneidrogen" (Medicinal Drugs); through his preparation of the pharmacognostical section of the fourth and fifth editions of the "Supplement to the Pharmacopœia for the German Empire;" as co-editor of the current edition of Hager's "Handbook of Pharmaceutical Practice," "Bavarian Pharmaceutical Legislation" (1908), "Synopsis of Pharmaceutical Practice," and "Synopsis of the Microscopic Determination of Officinal Drug Powders," and as the writer of countless articles in pharmaceutical publications which for over 20 years have had their part in creating in Germany a broader and deeper interest in pharmaceutical studies. Zörnig's lectures on the encouragement of an increased culture of medicinal plants in Germany, given in Munich, Frankfort and other cities during the War years of 1915 and 1916 and widely publicized by the professional press, as well as his work, "The Culture of Medicinal Plants," published in Munich in 1920, contributed greatly to the present interest in Germany in the culture of medicinal plants.

Dr. Zörnig's activity has earned for him during the course of years many honors. He is an honorary member of the AMERICAN PHARMACEUTICAL ASSOCIATION and the pharmaceutical societies in Austria, Munich and Basel and also of the Swiss Association of Pharmacists.

Congratulations are extended and hopeful wishes for health during many years.

CHANGES IN FEDERAL PHARMACOLOGY UNIT.

Dr. Herbert O. Calvary succeeds Dr. Erwin E. Nelson in Federal Pharmacology Unit. Dr. W. G. Campbell in the announcement states that Dr. Nelson has carried out the task assigned him to organize a pharmacological division with distinguished success.

Dr. Calvary was the first assistant appointed by Dr. Nelson when the work of organizing the Division was begun, and he served in that capacity during his entire organization period. Before coming to the Department he had been Assistant Professor of Chemistry at the University of Louisville and Instructor in Physiological Chemistry at Johns Hopkins Medical School for two years. Thereafter he was Assistant Professor of Physiological Chemistry at the University of Michigan. He is a Guggenheim Fellow studying at Dresden and Prague. Since his appointment he has been in charge of the biochemical work of the Division of Pharmacology.

ANNUAL REPORT OF THE CHIEF OF THE FOOD AND DRUG ADMINISTRATION.

Dr. W. G. Campbell, chief of the Food and Drug Administration, presented his annual report for the term ending June 30, 1936. In commenting on his report, Dr. Campbell said that quite a number of the Pharmacopœial and National Formulary products failed to meet requirements of the standards. Three hundred twenty-nine official samples of N. F. chemicals and preparations representing the output of one hundred six manufacturers were collected. Approximately 9% of these samples failed to meet the official standards of strength, quality and purity. Unofficial chemicals and preparations to the number of 2584, representative of 374 manufacturers, were sampled and examined. One hundred and seventy-one samples were made the basis of prosecution and 65 seizures were recommended.

Nine hundred seventy-nine samples of medicinal preparations for human use of the so-called proprietary class, the output of 471 manufacturers, were collected. One hundred thirty-five seizure actions were instituted for misbranding.

One hundred and forty-seven veterinary medicines were sampled and analyzed; 64 manufacturers were represented by these samples.

In the course of the year 20,000 bottles of isopropyl alcohol mixtures were sold as rubbing alcohol compounds; eighteen shippers being involved. Under the Food and Drugs Act isopropyl alcoholic preparations intended for external bodily use must show the exact nature of the article without any accompanying words or trade names which would tend to confuse the product with ethyl alcohol.

In commenting on the unsuccessful efforts to revise the Food and Drugs Act, that the measure as finally passed may more effectively protect consumers than any bill heretofore possible of enactment.

EDITORIAL NOTES

THE HOSPITAL PHARMACY.

"A department of the hospital which is often neglected is its pharmacy. Even in our moderate size or smaller hospitals the pharmacy should be under the direction of a full-time, competent pharmacist. The practice of trusting the compounding of simple staple hospital formulas to any but a competent pharmacist is hazardous, wasteful and should be prohibited.

"A sizable portion of the hospital income is spent for drugs, biologicals, pharmaceuticals and other supplies issued by the pharmacy. The pharmacist can save the hospital a considerable sum every year in the judicious, intelligent and economical purchase of hospital drugs and supplies. His accuracy in the compounding of prescriptions, in stock solutions and pharmaceuticals effect a greater saving. Th care and judgment which he uses in dispensing supplies will save the hospital many a dollar.

"But aside from this, there is a definite hazard for which the administration of the hospital is legally responsible, in permitting the filling of prescriptions and the dispensing of drugs by incompetent employees.

"Again the pharmacy should be well located, attractively furnished and equipped. Its shelves should be clean and well ordered and its stock of supplies kept fresh and up-to-date. The same exacting cleanliness should be established in the pharmacy as is practiced in the operating room. It should be in every instance a modern, well-appointed, well-equipped department of the institution staffed by a registered pharmacist."—Editorial in *Hospitals*, November 1936—the *Journal of the American Hospital Association*.

INFANTILE PARALYSIS RESEARCH.

The will of Mrs. Lelia H. B. Graham provides approximately $350,000.00 for research work on infantile paralysis at Johns Hopkins University.

EXAMINATION OF PHARMACISTS FOR MEDICAL ADMINISTRATIVE CORPS, REGULAR ARMY.

As announced in the September JOURNAL, page 837, examinations will be held December 14–18, 1936, to qualify, candidates for appointment as second Lieutenant in the Medical Administrative Corps, Regular Army, to fill eight of the existing vacancies. Examining boards will be convened at convenient locations. Full information and application blanks will be furnished upon request by The Adjutant General, War Department, Washington, D. C.

RESEARCH ON OPTICAL GLASS.

A broad program of fundamental investigations on the chemistry and physics of glass surfaces to aid in the development of scientific apparatus and ophthalmic instruments has been started at Mellon Institute of Industrial Research by the Bausch & Lomb Optical Company, of Rochester, N. Y. The first studies will be concerned with the effects of environmental factors on the durability of the various types of glass used in optical instruments. Dr. Frank L. Jones, the fellow since 1931, will be in charge of the new investigations.

ALLANTOIN.

Allantoin, a synthetic urea derivative, which has already been widely hailed as effective in the treatment of ulcers, burns, gangrene and other skin wounds, which had failed to respond to other methods, has now been applied with decided success to diabetic ulcers by Dr. Eugene C. Rice, of Washington, D. C.

His results were announced by U. S. Department of Agriculture officials in charge of an allantoin exhibit presented before the annual meeting of the Southern Medical Association, Baltimore.

PHARMACOPŒIAL HEARING.

A meeting of the Executive Committee, U S. P. Revision Committee was held at Hotel Washington, Washington, D. C., on November 30th. An opportunity was given those interested in U. S. P. Revision to present briefs and statements concerning texts, tests and assays. Chairman E. Fullerton Cook presided at a morning and an afternoon session.

James E. Hancock delivered an address before the Southern Medical Association, during its recent meeting in Baltimore. The subjects included by the speaker related to the origin of the "Star Spangled Banner," Fort McHenry, early Baltimore physicians and their influence on the development of Baltimore. The address was well received by radio listeners and the physicians.

CENTENNIAL CELEBRATION OF ARMY LIBRARY.

"The one hundredth anniversary of the founding of the Army Medical Library was observed with ceremonies at the library, November 16th. The principal address was delivered by Sir Humphrey D. Rolleston, Haslemere, Surrey, England, formerly regius professor of physic at the University of Cambridge, former president of the Royal Society of Medicine and the Royal College of Physicians, and physician extraordinary to the king. Other speakers included Col. Harold W. Jones, librarian, and Surgeon General Charles R. Reynolds. Rare books and manuscripts were on display."

PERSONAL AND NEWS ITEMS.

Dr. Simon Flexner, director emeritus of the Rockefeller Institute for Medical Research, has been appointed Eastman visiting professor at Oxford University, Oxford, England, for the academic year 1937–1938. The Eastman professorship was founded by the late George Eastman of Rochester to provide for scholars in American universities to go to Oxford as visiting professors for terms of from one to five years.

John S. Zinser has been elected a member of the board of trustees of the Philadelphia College of Pharmacy and Science. Other trustees named are: **George D. Beal** and **Joseph Rosin.**

Senator William E. Borah, according to press statements, will give support to the Tydings national fair trade enabling act at the next session of Congress.

Hugh P. Beirne, of the Connecticut Board of Pharmacy, was a speaker at a recent meeting of the Waterbury Dental Association; his subject was "Uses of Drugs in Dental Work." He brought into his discussion the relationship of dentists and druggists and references to proposed legislation sought by Connecticut dentists.

Prof. Ralph W. Clark will be Acting Professor of Materia Medica at the Pharmacy School, University of North Carolina, Chapel Hill, from January 1, 1937, until the end of the school year. He has been granted leave of absence from the University of Wisconsin. Mrs. Clark and children will accompany him.

U. S. P. AND N. F. EXHIBITS.

Complete sets of the U. S. Pharmacopœia and National Formulary were shown at a model drug store exhibit in Milwaukee, under direction of Dr. Edward Kremers and Milwaukee Pharmacists' Association.

Daniel Gabriel Fahrenheit died two hundred years ago, September 16, 1736. He was born in Danzig, two hundred and fifty years ago. His fame rests largely on his temperature investigations and specific gravity work.

NOBEL PRIZE.

This year's Nobel prize in medicine and physiology has been awarded jointly to Sir Henry Hallet Dale, director of the National Institute of Medical Research in Hampstead, London, and to Dr. Otto Loewi, professor of pharmacology at the University of Graz, Austria, for their discoveries related to the chemical transmission of nervous activity.

REPORT ON DRUG ADDICTION IN CALIFORNIA.

The State Interim Narcotic Committee of California has completed a Report on Drug Addition in California. Commissioner H. J. Anslinger prepared an introductory for the report on the National Narcotic situation. He expresses satisfaction that much headway has been made recently in the way of coöperation received from the several states and local authorities in the capture, apprehension and prosecution of narcotic violators.

PHARMACIST-ESPERANTISTS MEET IN TOKYO.

The following matters were discussed in Tokyo, October 15th, at a meeting of pharmacists:

Editing of a dictionary of pharmacy Esperanto, the extension of the membership of esperantists, extension of Esperanto among pharmacists.

One of the important considerations was the coming national convention of esperantists in Tokyo in 1937 in commemoration of the 50th anniversary of the establishment of this international language.

A revision of the Japanese Pharmacopœia is contemplated. It is stated that there has been great progress in pharmacy in Japan and that the 5th edition needs complete revision.

ST. LOUIS N. A. R. D. CONVENTION CITY.

The executive committee of the National Association of Retail Druggists has selected St. Louis, Mo., to be the host city for the 1937 convention of the N. A. R. D. Convention headquarters probably will be the Jefferson Hotel, and dates for the convention were set definitely as September 27th to October 1st. A sub-committee was appointed by Chairman Thomas S. Smith, of Wilmington, Del., to study the possibility of zoning the country to assure adequate representation with reasonable regularity.

Foremost among the objectives of the N. A. R. D. during 1937, the Executive Committee has decided, will be passage of the Tydings-Miller National Fair Trade Enabling Bill. Second only to this will be activities to assure the enforcement and effectuation of the Robinson-Patman law.

FLORIDA ASSOCIATION.

The Executive Committee of Florida Pharmaceutical Association at a recent meeting decided to prepare for the presentation of bills at the next session of the Legislature—a Fair Trade Act, Anti-Price Discrimination, bill, a Dangerous Drug Act, a State Poison Law and a bill to amend the State Board of Health Law, increasing its membership to five, one of whom shall be a registered pharmacist.

The Golden Jubilee meeting (1937) will be held in St. Petersburg, May 18th–20th.

EXPANSION PROGRAM OF VETERANS' ADMINISTRATION.

When the present program of hospital construction is completed by the Veterans' Administration, there will be available 12,914 additional beds. Of these, 8993 will be for the treatment of neuropsychiatric patients, 1576 for general medical and surgical patients, 157 for tuberculosis, and 2188 new beds will be added during the current fiscal year under the administration's building project, which provides for additional beds in forty-two of the existing hospitals and the erection of five new facilities. Appropriations made available by Congress February 2 and August 12, 1935, and March 19, 1936, totaled $29,015,420.00.—*J. A. M. A.*

SURGEON GENERAL'S CAMPAIGN.

A general check-up of the results of the syphilis campaign will be afforded at a meeting which will be held in Washington from December 28th–30th.

A part of the Public Health Service program contemplates the free distribution of anti-syphilitic drugs by states to all sources of treatment. This is believed to be rational as a partial subsidy to the medical profession because of the expense of private purchase of the necessary drugs by physicians particularly when patients are indigent, or nearly so. The drugs offered should include at least two of the common arsenicals and, so far as possible within budgetary limits, a generally accepted bismuth preparation.

EXEMPT NARCOTIC PREPARATIONS.

Commissioner Anslinger advises retail pharmacists that all sales of exempt narcotic preparations must be recorded for inspection by Federal agents. Failure to make such records is a violation of law.

MEDICINE AND PHARMACY GO HAND IN HAND.

Liberty is taken in quoting the two opening paragraphs from a radio address by Robert L. Swain, in the following:

"On this occasion, when Baltimore is host to the distinguished visitors comprising the Southern Medical Association, it is very fitting indeed that we give some public discussion to the problems met with in the administration of public health.

"As I visualize those problems after many years of association with them, I am impressed with the kinship of social and legal forces to the medical sciences upon which public health depends. By this statement I do not mean that law has stimulated the development of the medical sciences but I do mean that it has kept the road clear so that there may be a full realization of the social benefits and advantages which medical research has made possible in recent years. As medical scientists have labored, with no thought of time or price to the discovery of new drugs and medicines for the alleviation and treatment of disease, it has been the function of the law to restrain the quack and mountebank. One of the dominant hopes of mankind has been the discovery of remedies and cures for the diseases with which man has been harassed. In fact, the history of the development of medicine and pharmacy might be said to go hand in hand with the development of civilization itself."...

OBITUARY.

RICHARD V. MATTISON.

Richard V. Mattison, retired president of the Keasbey & Mattison Company, member of the AMERICAN PHARMACEUTICAL ASSOCIATION, died at his home in Ambler, Pa., November 18th, after an illness of two weeks. He had observed his eighty-fifth birthday just the day before.

Born in Solebury Township, Bucks county, Pa., Dr. Mattison attended public schools, was graduated with honors from the Philadelphia College of Pharmacy in 1873, and from the Medical School of the University of Pennsylvania in 1879. Soon after his graduation, he formed a partnership in Philadelphia with his classmate and friend, Dr. Henry G. Keasbey, for the manufacture of pharmaceutical products. This business grew until it was one of the largest in the country, and in 1883 the company moved its plant to Ambler and extended its business to include the manufacture of asbestos products. This enterprise prospered and included allied interests in other parts of the world. In 1929, Dr. Mattison purchased Dr. Keasbey's stock interest and the latter retired from the firm.

John F. Whelan, part owner of Whelan Drug Company, died in Mount Vernon, N. Y., November 14th, aged 75 years.

BOOK NOTICES AND REVIEWS.

A *Textbook of Pharmacognosy*. By HEBER W. YOUNGKEN, Ph.D., Sc.D., Professor of Pharmacognosy and Materia Medica, Massachusetts College of Pharmacy, Boston. Fourth edition, revised and enlarged with 469 illustrations containing about 1500 figures. Published by P. Blakiston's Son & Company, Philadelphia, Pennsylvania, 1936. Price $7.00.

This book is intended for use as a text by students in schools and colleges of Pharmacy. It is also adapted for use by the drug analyst, pharmacognosist, collector of crude drugs and the wholesale and retail pharmacist. In addition, it provides an excellent reference for the physician who may desire information concerning the characteristics and constituents of crude drugs.

In the fourth edition the original plan has been preserved but a number of important changes and additions in keeping with modern advances in pharmacognosy have been introduced. This book represents a thorough revision with considerable new material and 102 new illustrations added. In Part I which deals with "Morphologic Considerations of Drugs" additional information has been included in the sections dealing with "Fundamental Considerations," "Preservation of Drugs" and "Historical."

In Part II which deals with "Taxonomic Considerations of Drugs," additional information concerning the constituents, history, histology and production of crude drugs has been introduced and a large number of figures representing drug sections and powder characteristics have been added. The chapter on animal drugs has been expanded to include a number of new monographs on endocrine gland products together with illustrations showing the microscopical appearances of stained sections and powders. Also in Chapter 2, Part II a section on "Bacterial Biological Products" has been introduced and includes all official products of this class.

Other features of this text worthy of comment are: (1) the enlarged section dealing with cereals and cereal products with their diagnostic elements arranged in tabular form; (2) the complete histological descriptions of glands and gland products; and, (3) the section dealing with the examination of powdered desiccated endocrine glands.

The author has taken cognizance of the numerous researches in the field of Pharmacognosy as well as the many changes which have been incorporated in the latest editions of the U. S. P. and N. F., inasmuch as the many changes and additions are in conformity with these advances.

This book is adequate in scope to serve as a text for a complete course of instruction in Pharmacognosy as outlined in the Syllabus. It provides for sufficient flexibility to be adapted for use in schools and colleges which subdivide instruction in Pharmacognosy into courses dealing separately with Histology, Microscopy, and Sources and Constituents of Crude Drugs, as well as those which include all of the above in a general course. It is written in clear, concise English, adapted to the ability of students of college level, and is systematically arranged and in conformity to the monographs of the United States Pharmacopœia and the National Formulary.—B. V. CHRISTENSEN.

Other Book Notices and Reviews will follow in December and January issues of the JOURNAL.